GLOBAL DEVELOPER

2024 SUSTAINABILITY REPORT

DL Chemical

ABOUT THIS REPORT

Overview
This report is DL Chemical's third Sustainability Report, detailing its sustainable management commitment and achievements in 2023. DL Chemical publishes this annual report to disclose its sustainability achievements and commitment to the public and utilize it as a key communication channel through which it can reflect the voices of the stakeholders to its management activities.

Reporting Period
The reporting period is from January 1 to December 31, 2023. The report also includes some significant achievements in the first half of 2024. For quantitative performance, three-year data from 2021 to 2023 is presented to show the trend.

Reporting Scope
The financial report presented in this report is consolidated-basis covering both domestic and overseas subsidiaries while non-financial performance reflects only DL Chemical's Seoul Headquarters (HQs), Daejeon R&D Center, and its sites in Korea. Some of the qualitative performance items designed to depict DL Chemical's impact in the environmental and social aspects, however, may reflect the performance of both domestic and overseas subsidiaries with separate notations.

Reporting Principle
The report is prepared in line with the Global Reporting Initiative (GRI) Standards 2021 and adheres to the four principles of the AA1000AP (inclusiveness, materiality, responsiveness, and impact), a sustainability assurance framework. It also incorporates the Sustainable Development Goals (SDGs), a key global indicator for social responsibility. Financial information is prepared on a consolidated basis in line with the K-IFRS, while non-financial information is prepared under our disclosure system as of the fiscal year (December 31, 2023). Reasons for revising historical data, if any, are explained in footnotes below the relevant data set.

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DL Chemical Corporate Strategy Team

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CEO MESSAGE



Dear Stakeholders,

I would like to express my deepest appreciation for your support and interest in DL Chemical (DLC).

Recently, the petrochemical industry has faced several challenges, including oversupply caused by China's large-scale capacity expansion, global supply chain reorganization, and increased geopolitical risks. Extreme weather conditions worldwide, such as heat waves, droughts, and floods, are worsening daily, threatening our daily lives and business environment. Various regulations to prevent such climate changes are also being strengthened. However, crisis is something that inherently includes both threats and opportunities. From this perspective, DL Chemical sees the difficulties we are facing today as a challenge rather than a crisis, seeking new opportunities for sustainable growth.

First, DL Chemical is improving business competitiveness and securing future growth engines by developing products that align with megatrends, such as eco-friendly and high-tech industrial materials.

Last year, DL Chemical succeeded in commercializing Polyolefin Elastomer (POE) for photovoltaic encapsulant applications in the gas phase process for the first time globally. Our POE product is a high-value specialty product with a high premium compared to commodity PE. It has less carbon footprints as it requires less utilities compared to competitors' solution process (liquid-phase polymerization) products. Additionally, we are pushing for the commercialization of NOTARK resin, an ultra-high-speed PCB material that boasts the best performance among existing insulating resins. As the market requiring ultra-high-speed PCB materials, such as 6G communications, expands rapidly, DL Chemical plans to create new market demand through the commercialization of NOTARK resin.

Second, DL Chemical is strengthening ESG management to meet the international community's demands.

Last June, the IFRS Foundation announced disclosure standards mandating the disclosure of sustainable management information. In April this year, the European Parliament approved the 'Corporate Sustainability Due Diligence Directive (CSDDD),' which imposes human rights and environmental protection obligations on companies. To proactively respond to these increasingly stringent global standards and market demands, DL Chemical is making various efforts. We provide environmental impact information, such as the carbon footprint of products, to our clients by performing a Life Cycle Assessment (LCA) to quantitatively analyze the environmental impact during the production of all products we carry. Regarding workplace safety, we have established and focused on implementing global standards aimed at preventing incidents themselves, regardless of their size or severity. As a result, we achieved zero accidents last year. Through ESG management, DL Chemical is managing non-financial risks and plans to establish governance on a consolidated basis (including subsidiaries) and improve the management standard for major ESG issues, such as carbon neutrality.

Third, DL Chemical pursues transparent and ethical management based on stakeholder trust.

To prevent corruption, and violation of laws and regulations, DL Chemical has established a strict compliance policy and management system and has worked to raise employees' awareness of compliance through regular training and newsletters. Last year, we joined the UN Global Compact (UNGC), publicly committing to universal principles such as human rights, labor, environment, and anti-corruption, and internalizing sustainability in corporate management. Additionally, since our establishment in 2021, we have published a sustainability report annually, disclosing our sustainability information to internal and external stakeholders. We will continue to maintain the trust of our stakeholders by presenting DL Chemical's blueprint for future growth and transparently sharing the results and plans of ESG management activities.

Dear valued stakeholders,

DL Chemical strives to become a technology-based specialty chemical company through innovation and a challenging spirit.

To this end, we aim to secure future growth engines, such as eco-friendly materials and high-value products, and at the same time strengthen ESG management to become a company highly trusted within the environmental, social, and economic ecosystem. We ask for your continuous affection and interest in DL Chemical's journey.

Thank you.

CEO DL Chemical **Kim, Jong Hyun**

COMPANY OVERVIEW

About DL Chemical

DL Chemical has contributed to the development of the Korean petrochemical industry based on 49 years of petrochemical plant operation experience and proprietary technology. The company boasts a product portfolio that spans from polyolefins to elastomers and biochemicals, underpinned by its vertically integrated business structure. DL Chemical is rapidly transitioning its business structure towards high-value-added specialty areas through mergers and acquisitions to stand as a technology-driven global specialty petrochemical company.

Overview

Company Name	DL Chemical Co., Ltd.
Year of Establishment	2021(Initially founded as Honam Ethylene in 1975)
Address	26th Fl. D-Tower Donuimun, 134 Tongil-ro, Jongno-gu, Seoul
CEO	Kim, Jong Hyun
No. of Employees	718*
Business	PE, PB, EPO(Owns subsidiaries specialized in synthetic rubber, biochemical, adhesive materials, and plastic films)

*Sum of full-time and part-time employee headcount as of December 31, 2023

Financial Highlights

Consolidated Unit: Million KRW

Assets
7,616,801

Revenue
4,343,730

Standalone Unit: Million KRW

Assets
4,201,066

Revenue
1,606,382

DL Chemical History

Originally founded as Honam Ethylene in 1975, DL Chemical has diversified its business areas to NCC, synthetic resins, processing business, and recently to synthetic rubber, adhesive materials, and bio-chemicals. Based on our experience and achievements, including the first commercialization of metallocene polyethylene in Korea, being the first Korean petrochemical company to export technology to the US market, and acquiring Kraton, a leading company in synthetic rubber and bio-chemicals, we are solidifying our position as a high-value specialty chemical company.

History









1975 ~ 2010 Vertical Integration

- Founded Honam Ethylene in 1975
- Established the Petrochemical Division within Daelim Industry in 1987
- Produced Korea's first commercial polybutene in 1992
- Established Yeocheon NCC, a joint venture with Hanwha Group in 1999
- Established PolyMirae, a joint venture with LyondellBasell in 2000
- Produced Korea's first commercial Metallocene polyethylene in 2006

2011 ~ 2019 Maximizing R&D Capability

- Produced Korea's first commercial highly-reactive Polybutene in 2020
- Became the first Korean company to export petrochemical technology (Polybutene) to the US in 2015
- Developed EPO in 2017
- Developed the next-gen Metallocene polyethylene in 2019

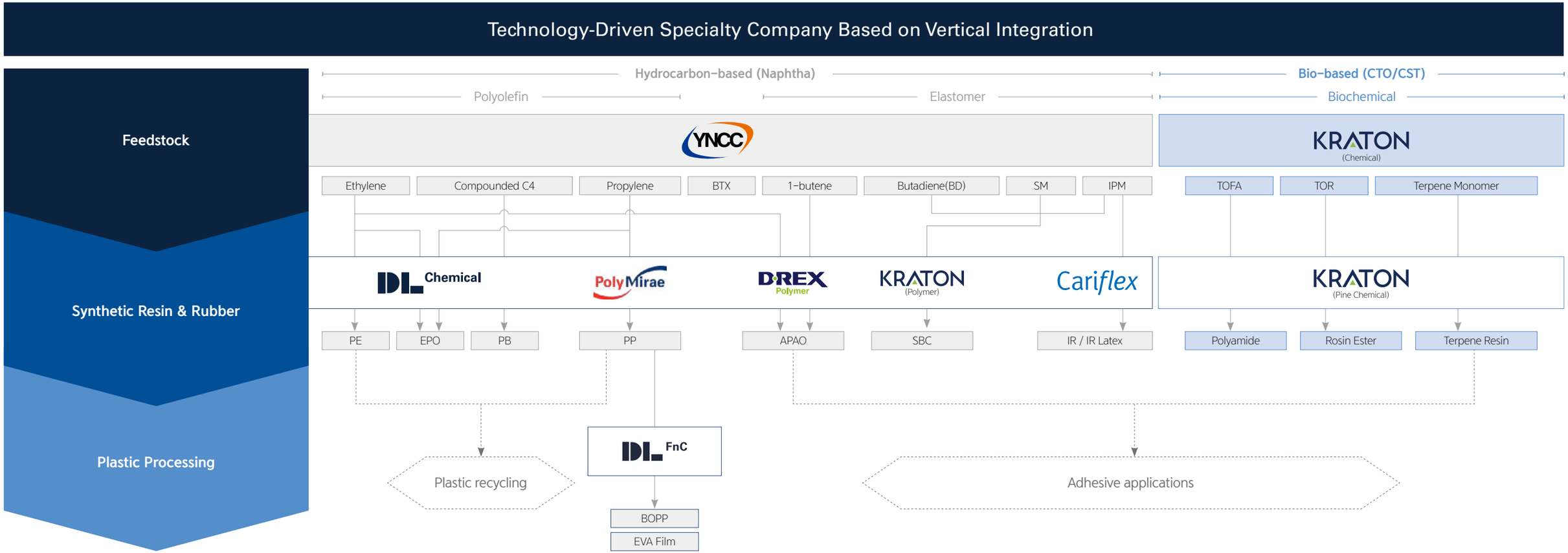
2020 ~ Technology-Driven Specialty Company

- Acquired Cariflex in 2020
- Spun off from Daelim Industry's Petrochemical Division to stand as an independent entity, DL Chemical (2021)
- Established D-REX Polymer, a joint venture with REXtac in 2021
- Acquired Kraton in 2022

COMPANY OVERVIEW

Business Value Chain

DL Chemical operates both traditional naphtha-based petrochemical businesses and bio-based chemical businesses. With a vertically integrated business structure spanning from upstream to downstream and a portfolio encompassing polyolefins, elastomers, and bio-chemicals, we offer differentiated value to our customers. Additionally, leveraging our products, core technologies, and market and customer experience, we are pursuing business expansion into areas such as plastic recycling and adhesive applications.



COMPANY OVERVIEW

Business Portfolio

Polyolefin Chain

DL Chemical's product portfolio ranges from typical synthetic resins such as HDPE (high-density polyethylene) and mLLDPE (Metallocene linear low-density polyethylene) to specialty products such as PB (polybutene-propylene oligomer) used as a lubricant additive and EPO (ethylene propylene oligomer). Recently, we have successfully commercialized the world's first POE for photovoltaic encapsulant materials in a gas phase process and are positioning it as our flagship product. HRPB, which only four companies in the world, including DL Chemicals, have the technology to produce, is used in fuel detergent and lubricant performance enhancers to improve the energy efficiency of internal combustion engines. Our subsidiary, DL FnC, has the largest production capacity of BOPP (bi-axially oriented polypropylene) film in Korea, and D-REX Polymer produces APAO (amorphous poly alpha olefin), an adhesive material harmless to the human body. Our affiliated companies include YNCC, a leading domestic NCC (naphtha cracking center) company, and PolyMirae, which produces specialty PP (polypropylene).



#PE #PB #EPO #BOPP #APAO #NAPHTHA CRACKING #PP

Elastomer Chain

DL Chemical entered the synthetic rubber market with medical materials, such as surgical gloves, by acquiring Cariflex in 2020. Soon after, in 2022, we acquired Kraton, the parent company of Cariflex, further solidifying our position in the synthetic rubber market. Styrenic Block Co-Polymer (SBC), for which Kraton began commercial production for the first time globally, is used in various applications, such as sanitary products, adhesives, and automobile interior materials. Kraton ranks first in market share based on SBC production capacity in the United States and Europe. Cariflex, the global No. 1 in the IRL (Isoprene Rubber Latex) surgical glove market, produces products free from allergens, such as natural rubber proteins and plasticizers, leveraging its excellent anion polymerization technology. Kraton and Cariflex develop products for various applications to meet customers' diversifying needs. In particular, Cariflex is building the world's largest IRL plant in Singapore to respond to demand in the Asian region.



#SBS #SIS #SEBS #SEPS #IR #IRL

Biochemical Chain

Kraton's Pine Chemicals Division (acquired by DL Chemical in 2022) produces products using pulp by-products from the papermaking process. Kraton's biochemical products, such as TOFA (Tall Oil Fatty Acid) and TOR (Tall Oil Rosin), are used in biodiesel, adhesives, road marking, and paving, for less fossil fuel use. Since these products are bio-based, they can also help reduce carbon emissions throughout the product life cycle.

Amid ever-strengthening environmental regulations and increasing public interest and demand for eco-friendly products, DL Chemical considers eco-friendliness as a new business opportunity and seeks ways to utilize Kraton Pine Chemicals Division's bio-material capabilities. To create higher customer value, we develop eco-friendly products by leveraging synergies among DLC entities and exploring collaboration opportunities with various partners willing to apply bio feedstock and materials.



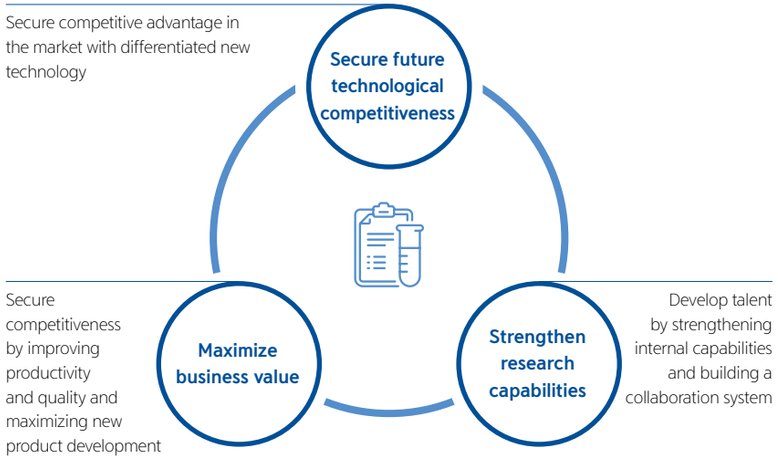
#TOFA #TOR #PITCH #TERPENE MONOMER #TERPENE RESIN

COMPANY OVERVIEW

DL Chemical's R&D

- DL Chemical, which has been leading the development of Korea's petrochemical industry, is pursuing a differentiation strategy for its existing main business through R&D, focused on customer needs such as eco-friendly solutions to continuously secure future growth engines.
- We develop eco-friendly materials through specialty and eco-friendly solution businesses, to help reduce plastic usage and improve the recyclability of plastic materials compared to existing products.
- We are expanding our research and development activities to lead the market in each field through continuous development of synthetic rubber and future businesses.
- To improve long-term competitiveness and secure growth potential, we are trying to discover promising future businesses, such as eco-friendly products and new polymer materials, to become a leading chemical company of the future.

DL Chemical's R&D Directions and Strategies



Major R&D Achievements

1992 Began Korea's first commercial PB (Polybutene) production

2006 Began Korea's first commercial mLLDPE (Metallocene Polyethylene) production

2010 Began Korea's first commercial HR-PB (High Reactive Polybutene) production

2017 Developed EPO (ethylene-propylene oligomer)

2019 Developed Korea's first next-gen metallocene polyethylene 'D.FINE' (BOCD*)

- Applied proprietary catalyst technology, including synthesis and polymerization with various catalysts and polymer analysis
- With its excellent physical properties and processability, it can reduce energy use and carbon emissions compared to existing metallocene products
- Developed a recipe for mixing D.FINE and recycled plastic to improve applicability at the end-user stage

2023 Developed Notark Resin, a high-insulation PCB material

Notark, an in-house venture, developed innovative materials for ultra-high-speed communicatins and next-gen semiconductor packaging

Developed polyolefin elastomer (POE) in the gas-phase process for the first time in the world

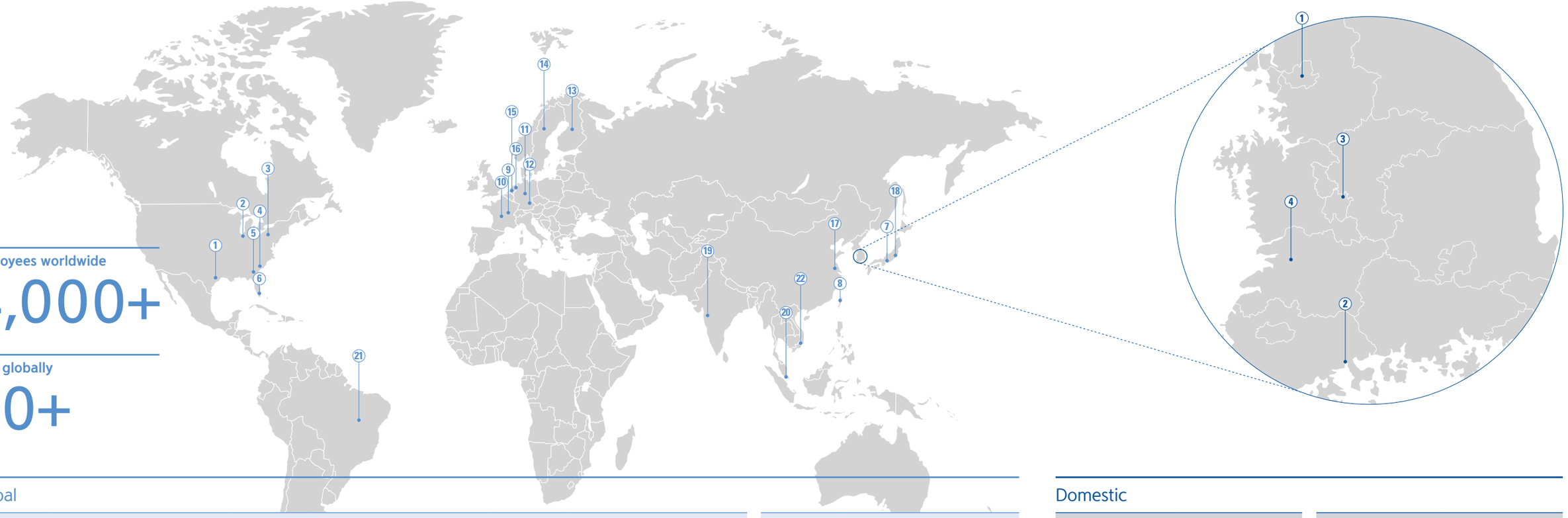
- A high value-added material used in solar panel film (encapsulant), contributing to the transition to renewable energy
- Reducing energy use and carbon emissions compared to existing POE process by applying the gas-phase process

*Broad Orthogonal Composition Distribution

Status of Intellectual Property Rights (as of March 2024)

Domestic Patents		International Patents	
Patent Applications	Patent Registrations	Patent Applications	Patent Registrations
232	161	436	311

GLOBAL NETWORK



Employees worldwide

4,000+

Sites globally

30+

Global

Kraton			
HQ	① Houston, U.S.		
Manufacturing Facilities	② Dover, U.S.	⑨ Niort , France	
	③ Belpre, U.S.	⑩ Berre, France	
	④ Savannah, U.S.	⑪ Gersthofen, Germany	
	⑤ Pensacola Florida, U.S.	⑫ Wesseling, Germany	
	⑥ Panama City, U.S.	⑬ Oulu, Finland	
	⑦ Kashima, Japan	⑭ Sandarne, Sweden	
	⑧ Mailiao, Taiwan		
R&D	① Houston, U.S	⑮ Almere, Netherlands	⑲ Mumbai, India
	③ Belpre, U.S.	⑯ Amsterdam, Netherlands	
	④ Savannah, U.S.	⑰ Shanghai, China	
		⑱ Ibaraki, Japan	

Cariflex	
HQ	⑳ Singapore
Manufacturing Facilities	㉑ Paulínia-SP, Brazil
	⑳ Singapore
R&D	⑯ Amsterdam, Netherlands
DL Chemical	
	⑰ Shanghai, China
	⑳ Singapore
	㉒ Ho Chi Minh City, Vietnam

Domestic

DL Chemical	
HQ	① Seoul, Korea
Yeosu Manufacturing Facility	② Yeosu, Korea
Daejeon R&D Center	③ Daejeon, Korea
DL FnC	
HQ	④ Wanju, Korea
Manufacturing Facilities	④ Wanju, Korea

Yeochun NCC	
HQ	① Seoul, Korea
Manufacturing Facilities	② Yeosu, Korea
D-REX Polymer	
HQ	① Seoul, Korea
Manufacturing Facilities	② Yeosu, Korea

SUSTAINABLE BUSINESS

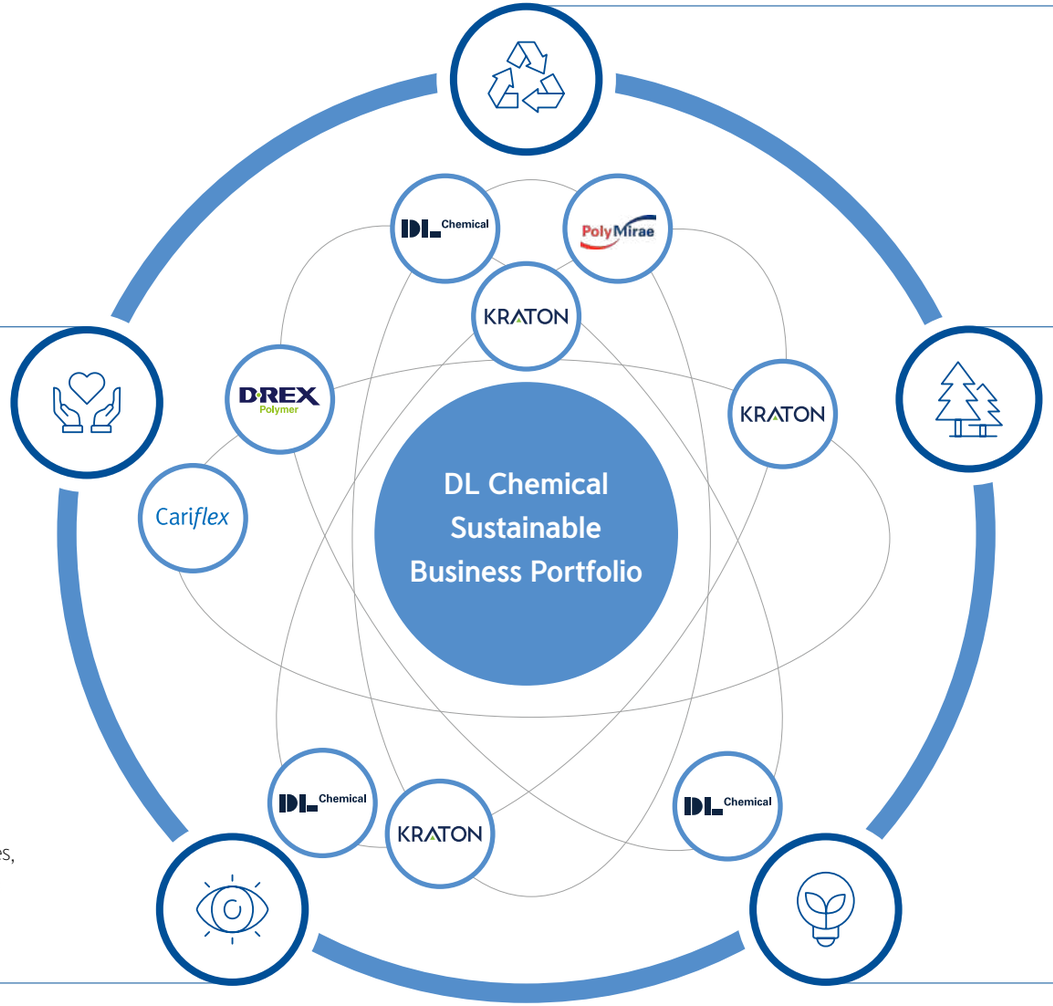
Sustainable Business Portfolio

Recyclable materials for a virtuous circle

- Reduce carbon emissions and waste by reusing, recycling, and upcycling for production and consumption.
- E.g., recycled plastic and additives to strengthen the physical properties of recycled plastic

Harmless materials to human

- Contribute to personal hygiene, health, and public health by replacing harmful materials, such as volatile organic compounds.
- E.g., high-purity medical materials and harmless-to-human adhesives



Bio feedstock/materials

- Preserve natural resources and reduce carbon emissions by replacing fossil fuel-derived materials with eco-friendly materials extracted from biomass
- E.g., biochemical materials derived from wood by-products

Materials aligned to megatrends

- Discover new growth engines by applying megatrends to business strategies, which have a 360-degree impact on industrial and consumption structures
- E.g., eco-friendly industrial materials and next-gen communications and semiconductor materials

Environmental impact-reducing materials

- Reduce carbon emissions and environmental pollutants throughout the entire product life, including production and consumption.
- E.g., Downgauging (less for the same performance) materials and additives to improve energy efficiency

SUSTAINABLE BUSINESS

Sustainable Business Portfolio

Recyclable materials for a virtuous circle

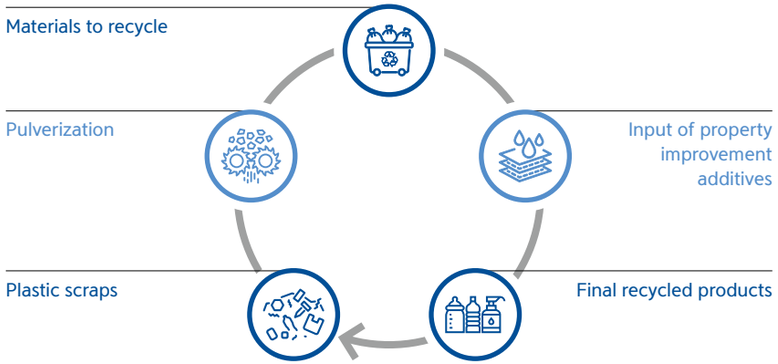
Additives with recycled plastic

Kraton carries 'CirKular+,' an additive that improves recycled plastic's physical properties and functionality. Recycled plastics are disadvantaged because their physical properties are inferior to those of new materials. However, CirKular+ contributes to a wider adoption of recycled plastics by addressing this shortcoming.

Recycled Plastic (PE)

In early 2021, DL Chemical created a recycling solution that blends recycled PE and DL Chemical's downgauging product, D.FINE. In 2022, we obtained the Global Recycled Standard (GRS) certification for recycled PE products and has been renewing it annually. PE is the most commonly used plastic product. Still, its recycling rate has been very low because of its low single-material proportion and the difficulty in separating foreign substances. Fully understanding the social necessity of PE recycling, DL Chemical works to build a virtuous cycle of resources by starting with the mechanical PE recycling market first.

Mechanical recycling process

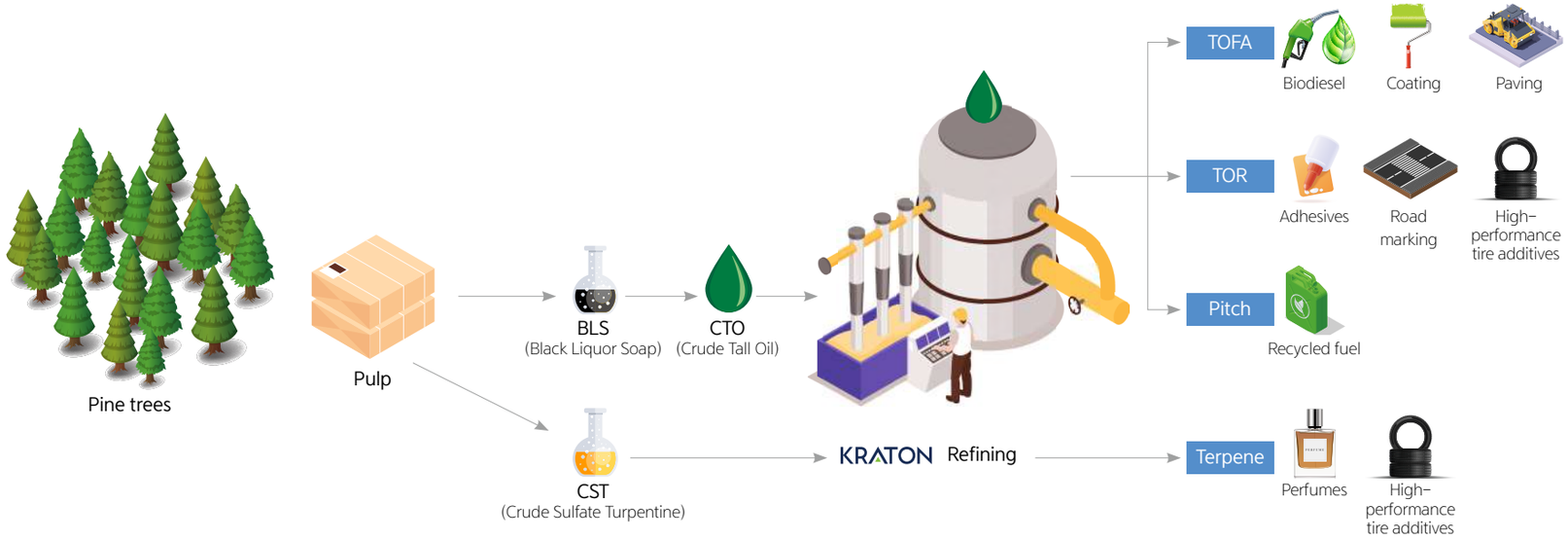


Bio feedstock/materials

Kraton's biochemical business

The chemical industry can obtain feedstock from various natural by-products as well as the usual fossil fuels, such as petroleum. Deriving from nature, biochemicals business can contribute to the environment and enhance customer value by reducing the carbon emissions from products compared to traditional petrochemicals. Kraton's Chemical Division produces this sustainable feedstock using by-products from the pine wood pulping process. Kraton's main product, TOFA (Tall Oil Fatty Acid), is used in biodiesel, high-performance coatings, and road paving. Meanwhile, TOR (Tall Oil Rosin), an eco-friendly alternative to high-value chemicals, is applied to adhesives, road markings, and high-performance tire additives. Pitch, waste residue generated from bioproduct production, is used as an energy source in paper mills and chemical plants. CST (Crude Sulfate Turpentine), one of the feedstocks obtained by chemically processing pine wood chips, is refined to produce terpene monomers and terpene resins used in fragrances and high-performance tire additives.

Biochemical business value chain



SUSTAINABLE BUSINESS

Sustainable Business Portfolio

Harmless to human body

Medical materials

In the chemical industry, one of the most important product features, besides eco-friendliness, is its harmlessness to the human body. Especially in the medical field, where hygiene standards are the strictest, the demand for high-quality medical materials is growing significantly, as we have recently experienced during the large-scale, unexpected pandemic. Cariflex's IRL (Isoprene Rubber Latex) and IR (Isoprene Rubber) are high-purity synthetic rubbers. Produced based on anion polymerization technology, they offer the advantage of being free of allergens, such as natural rubber protein, ammonia, chlorine, and plasticizers. In addition, they are user-friendly with excellent elasticity, flexibility, and texture, making them a popular choice for high-quality medical supplies, such as surgical gloves.

Adhesive materials with no harm to human body

Awareness of consumer safety in daily life is increasingly high today, and personal hygiene products must be made of safer and more harmless materials because they come in direct contact with the human body. D-REX Polymer, a JV between DL Chemical and REXtac of the US, produces APAO, a hot melt adhesive material that can be melted and attached using heat. APAO is applied to industrial products, such as automobile interior and exterior materials, that require bonding of different types of plastic resins, because of its high self-adhesion and thermochemical stability. Also, it is virtually free from volatiles and odors, making it perfect for personal care products like diapers and sanitary napkins.

Environmental impact-reducing materials

Downgauging

DL Chemical's next-generation PE products have superior physical properties to existing products, such as toughness and rigidity, providing the same durability with less plastic. Reducing the product's thickness also allows for more diverse applications. This process, known as downgauging, can reduce feedstock usage and costs throughout the value chain and the environmental impact on society.

Improving energy efficiency of internal combustion engines

DL Chemical's PB products are used as feedstock for dispersants, one of the engine oil additives. The PB-based dispersant prevents surface deposition by dispersing combustion products, oil oxidation products, and sludge inside the engine. They keep the engine interior clean and prolong vehicle life. Improved fuel efficiency reduces fuel consumption and air pollution caused by exhaust gases. They extend the lifespan of the oil, extending the replacement cycle and reducing the amount of waste generated during replacement. In addition, PB products are also used as feedstock for fuel detergent, which are automobile fuel additives, improving fuel economy and reducing exhaust gases, such as HC, CO, NOX, and PM.







SUSTAINABLE BUSINESS

Sustainable Business Portfolio

Materials aligned to megatrends

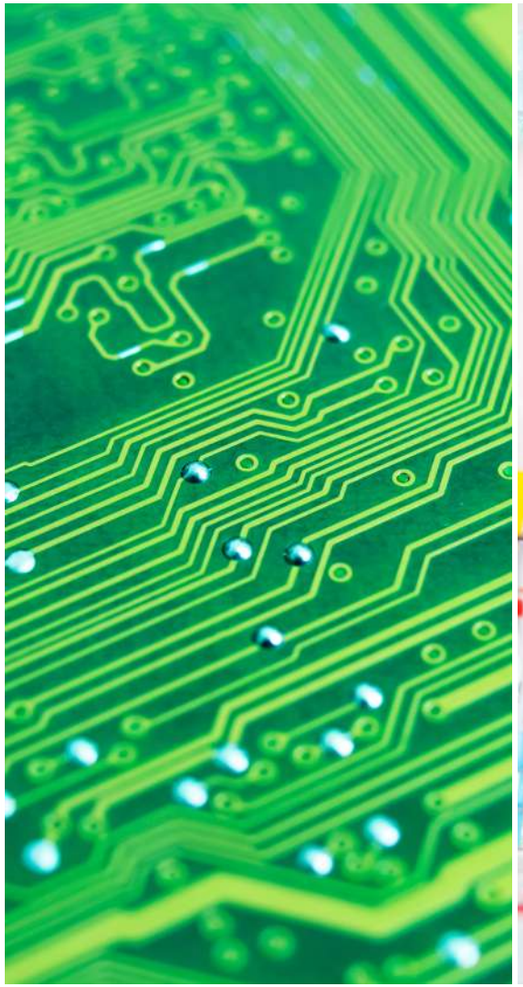
Photovoltaic materials (POE)

DL Chemical has focused on strengthening its competitiveness through the development of new materials rather than just competing in the global general-purpose plastics market. As a result, based on our advanced metallocene catalyst technology and know-how, we developed POE, a photovoltaic encapsulant material with excellent resistance to chemicals, ultraviolet rays, and weathering. In particular, DL Chemical successfully commercialized POE globally for the first time through gas-phase polymerization. Compared to the existing liquid-phase polymerization process, POE reduces carbon emissions while also providing superior cost competitiveness. As a result, POE is actively used in the renewable energy sector, contributing to the transformation of our business structure and improving profitability

High-insulation PCB material (Notark resin)

DL Chemical carved out the Break Through Team from Kraton, one of its subsidiaries, to incorporate an independent in-house venture, Notark. Notark has been working on new material development projects completely different from the existing business areas of DL Chemical and Kraton. Notark resin, a high-insulation PCB material used in ultra-high-speed communications and next-gen semiconductor packaging is one of the products Notark has developed. A PCB (printed circuit board) comprises circuits printed on the wide insulating board and electrically connects the components mounted on it. It is a key component of electronic products, mobile phones, and automobiles. When electrical signals are transmitted between each component, a slight electrical signal loss occurs on the insulating board. It leads to a slowdown in data transmission speed and heat generation, so it is important to reduce signal loss in ultra-high-performance PCBs used in next-gen communications. The signal loss rate of Notark resin is more than 10 times less than that of existing epoxy resins. Notark resin also meets the heat resistance and electrical resistance requirements of next-gen communications. DL Chemical will continue developing promising materials that meet megatrends and become a technology-centered specialty company capable of sustainable growth.







OUR APPROACH TO ESG

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ESG MANAGEMENT SYSTEM

ESG Management Strategy

As a global chemical company, DL Chemical has set “We lead the change toward a sustainable future” as its ESG vision to focus on and internalize ESG management at the core of its future growth engine. To realized this vision, we developed ESG management strategies in three pillars: environmental, value-based, and trust management. We identify major ESG issues in each pillar, analyze stakeholder needs, external trends, and internal status to manage key ESG areas that are most relevant to our business. In addition, we are prioritizing tasks derived from internal and external status assessments based on materiality and urgency and implementing strategic initiatives for each focus area.

ESG Vision and Strategic Framework

ESG Vision

We lead the change toward a sustainable future

Strategic Directions	Environmental Management Change for Planet	Value-based management Change for People	Trust management Change for Prosperity
10 Focus Areas	Climate action Pollution and Emission Management Virtuous Cycle of Resources Eco-friendly Products and Product Liability	Human Capital Safety/Health Responsible Supply Chain Management	Compliance Communication with Stakeholders Advancing ESG Management
Mid- to long-term Strategic Initiatives	**Climate Action / Pollution and Emission Management** ① Specify the environmental management plan, including carbon reduction ② Establish other indirect emissions (Scope 3) management system ③ Review the financial impact of climate change risk and formulate response strategies ④ Strengthen expertise and organizational capacity in climate and environmental matters ⑤ Establish and review mid- to long-term investment plan to transition to renewable energy ⑥ Reinforce the harmful substance treatment and management systems **Virtuous Cycle of Resources / Eco-friendly Products and Product Liability** ⑦ Define eco-friendly portfolio and broaden product lines ⑧ Refine the LCA process	**Human Capital** ⑨ Increase employee engagement and improve organizational culture ⑩ Plan and implement human rights impact assessments **Health and Safety** ⑪ Strengthen the Health and Safetystrategy/system and company-wide monitoring **Responsible Supply Chain Management** ⑫ Set and implement a supply chain ESG risk assessment system ⑬ Systemize and operate supplier capacity-building programs	**Compliance** ⑭ Analyze ESG-related legal and regulatory trends and update the issue pool ⑮ Enhance the compliance-issue sharing system **Communication with Stakeholders** ⑯ Manage major stakeholders and strengthen communication with them ⑰ Expand ESG reporting and brand communication **Advanced ESG Management** ⑱ Build an ESG/non-financial information system linked to IT ⑲ Implement strategies and refine strategic initiatives for ESG management ⑳ Respond to ESG initiatives ㉑ Upgrade the operation of ESG Management Council and Committees ㉒ Establish and implement advanced ESG-conscious investment criteria
UN SDGs	7, 11, 12, 13	3, 4, 8	16, 17

ESG MANAGEMENT SYSTEM

Performance and Implementation Plans for Strategic ESG Initiatives

- The company has defined tasks and goals for relevant units to achieve 22 mid- to long-term strategic ESG initiatives

Focus Areas	2023 Performance	2024 Tasks and Goals
Climate Action/Pollution and Emission Management	• Calculated Scope 3 emissions for years 2021 and 2022 • Reviewed substances that reduce the consumption of hazardous chemicals	• Deliberate on the company's Carbon Neutrality Roadmap • Set and manage annual goals for top priority environmental indicators • Calculate the Scope 3 emissions for '23 and have them verified by a third party • Set strategies for greenhouse gas (GHG) allowance trading • Forecast annual supply, demand, and price of carbon credit (2024 – 2030) • Train relevant officers to bolster their competencies • Substitute or reduce the use of high-risk hazardous chemicals
Virtuous Cycle of Resources/Eco-friendly Products and Product Liability	• Expanded the sales of recycled products (doubled compared to the 2022 sales) • Completed the LCA for all products	• Develop and expand the types of eco-friendly industrial materials
Human Capital	• Implemented the tasks for '23 (15 items) to improve the organizational culture • Introduced and implemented the Team Work Indication Map (TWIM) • Introduced the human rights impact assessment	• Operate programs to improve the organizational culture continuously and fully accomplish the related activities • Obtain at least 70% positive response about the organizational culture • Take follow-up measures based on the result of the 2023 in-house human rights impact assessment; perform the 2024 human rights impact assessment • Establish and implement human rights improvement plans based on impact assessment
Health and Safety	• Started building an HSE Portal to bolster the health and safety management system and company-wide monitoring (to be completed in the third quarter, 2024)	• Strengthen support for supplier HSE management systems and training • Establish a quantitative evaluation plan to determine the suppliers' health and safety management level
Responsible Supply Chain Management	• Operated and improved a supplier ESG risk assessment system (expanded assessment items and target suppliers) • Reviewed the supplier capacity-building programs	• Operate the supplier ESG evaluation system continuously and fully accomplish the related activities • Introduce training programs for suppliers and host ESG training/briefing sessions (annual)
Compliance	• Built an ESG-related legal/regulatory risk management pool and a periodic update system • Maintained the ISO37301 certification	• Analyze and update information on overseas trends in relevant laws/regulations • Review the CSDDD and analyze its impact on the business • Respond to the Shared Growth Index Evaluation and raise the rating to 'Fair' or above
Communication with Stakeholders	• 0|Surveyed stakeholders' needs (twice a year) • Published the 2023 Sustainability Report	• Survey internal/external stakeholders' needs (Double Materiality Assessment) • Publish the Sustainability Report
Advanced ESG Management	• The ESG department developed KPIs reflecting the 2023 strategic initiatives, followed up by all-year-round management • Joined the UNGC (UN Global Compact) • Introduced an ESG Working Council • Updated the checklist for reviewing ESG-conscious investments	• The ESG department shall develop KPIs reflecting the 2024 strategic initiatives • Respond to EcoVadis requirements • Submit the Communication of Progress (CoP) on sustainable management activities to the UNGC • Operate the ESG Committee (once every half year) and the ESG Working Council (quarterly)

ESG MANAGEMENT SYSTEM

ESG Committee

- DL Chemical keeps its ESG Committee under the BOD to lay a foundation for ESG management at the top management level and systemize its management

ESG Governance Structure



ESG Committee Operating Policy

- The ESG Committee comprises at least three directors appointed by the BOD, with outside directors accounting for at least two-thirds of the total.
- The ordinary committee meetings are held every six months, while extraordinary meetings can be convened as needed.
- The day before the meeting, each member is notified of the convening of the committee in writing, electronically, or verbally. If all members agree, the meeting can be held without the convocation procedure.
- The resolution of the committee is determined when a majority of members are present and a majority of the present vote for.
- The committee receives reports on the ESG management activities and related risks arisen and measures taken. It establishes ESG management policies, strategies, and goals and decides whether to join major ESG initiatives.

ESG Committee Operation

Category	Date	Agenda	Approved or Rejected	Non-outside directors	Outside directors	
				Kim, Jong Hyun	Kim, Ui Chang	Lee, In Soo
				For or Against		
ESG	Jun. 29, 2023	• [Report] CP activity status and plans	-	-	-	-
		• [Report] Review of compliance management under ISO37301	-	-	-	-
		• [Resolution] Approval of joining the ESG initiative UNGC)	Approved	For	For	For
	Dec. 19, 2023	• [Report] CP activity status and plans	-	-	-	-
		• [Report] ESG management implementation status and the direction for the following year	-	-	-	-

ESG Working Council

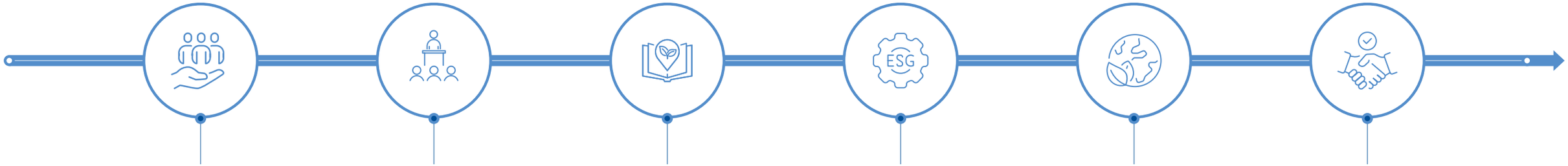
- The ESG Working Council is comprised of working-level staff from relevant departments and was organized to strengthen communication and collaboration among them and advance ESG management by establishing an organic operating system with the ESG Committee
- Held quarterly, the Council establishes annual strategic initiatives in the first quarter of every year and, in the following quarters, reviews the results of the strategic initiatives carried out in the previous quarter.
- The Council submits the following as major agenda items: Sharing ESG-related instructions and feedback of the BOD and ESG Committee; addressing difficulties faced in implementing strategic initiatives and the need for cooperation with other departments; and sharing important ESG-related issues each department have captured
- The Council improves ESG operation efficiency through regular inspection of ESG strategic initiatives, sharing progress with relevant departments, and requesting cooperation
- The Council promotes understanding of ESG issues across the organization by sharing ESG-related stakeholder requirements and regulatory trends recognized by each department
- Important issues discussed at the council are reported to the ESG Committee to support management's quick decision-making, and through this, the council strengthens DLC's responsiveness to potential ESG risks

ESG Working Council's Operation in 2023

Meeting Date	Agenda
April 26, 2023	• Sharing ESG issues: EU CSDDD • Review and discussion on the progress of ESG strategic initiatives in the first quarter
July 27, 2023	• Sharing ESG issues: Carbon Boarder Adjustment Mechanism (CBAM), CSDDD (a revision by the European Parliament) • Sharing the ESG Committee's resolution (joining the UNGC) • Review of and discussion on the progress of ESG strategic initiatives in the second quarter
October 31, 2023	• Review of the progress of ESG strategic initiatives in the third quarter and the plan for the remaining period

ESG MANAGEMENT PERFORMANCE

DL Chemical ESG History



Mar. 2022
ESG Committee established

Jun. 2022
The first ESG Committee meeting held

Jul. 2022
The first Sustainability Report published

Dec. 2022
The ESG strategic framework approve

Jan. 2023
ESG strategic initiatives implemented

Apr. 2023
ESG Working Council established

DL Chemical ESG Highlight

E
Environmental

- [Achievement] Scope 3 emissions measured and verified
- [Achievement] All DLC products (PE, PB, EPO) underwent LCAs.
- [Achievement] Renewed the GRS certification

ENVIRONENTAL

S
Social

- [Achievement] Building an integrated HSE Portal
- [Achievement] Operated and improved the supplier ESG risk assessment system
- [Achievement] Assessed the human rights impact for the first time
- [Achievement] Introduced and implemented the TWIM(Team Work Indication Map)

SOCIAL

G
Governance

- [Achievement] Joined the UNGC ESG Initiative
- [Achievement] Established the ESG strategic initiatives management system
  - Included ESG management items in the annual strategic initiatives of departments and aligned with the department heads' own performance appraisal
  - Monitored the implementation via the ESG Working Council
  - Reported the status of initiative implementation and next year's plan to the ESG Committee
- [Achievement] Maintained the ISO37301 certification

GOVERNANCE

ESG MANAGEMENT PERFORMANCE

Communication with Stakeholders

- DL Chemical has categorized its stakeholders into customers, employees, shareholders and investors, suppliers, local communities, and governments according to their accountability, influence, proximity, dependency, and representation. We have established communication channels tailored to the characteristics of each stakeholder to collect diverse opinions and report them to management to respond to stakeholder demands and reflect them in management activities.

Stakeholder-specific communication channels and responses

Stakeholders	Definition	Communication Channels	Major Issues	Responses
Customers	• Entities who purchase our products and services and are integral to our sustainable growth	• Website • Customer satisfaction survey • Corporate brochure • DL's YouTube channel	• Reducing GHG emissions and improving energy efficiency • Eco-friendly products • Resource circulation	• Implementing CRM • Customer satisfaction surveys • Quickly handling quality and transport-related claims • Developing new products • Providing product LCA information
Employees	• Principal agents who support and make products and services	• Cyber Whistleblowing Center on our website • Town Hall Meetings • Labor-Management Council • The Occupational Health and Safety Committee • Internal communication programs (Junior DL, conferences)	• Labor conditions and welfare benefits • Human rights management • Talent management • Employee health and safety	• Supporting for work-life balance • Capacity-building programs • Employee welfare benefit systems • Improving the work environment • Improving health and safety activities
Shareholders and Investors	• Providers of financial resources to enable us to implement various strategies, operate businesses, and maintain sustainable growth	• AGMs • BOD • Public disclosures and IR materials	• Reducing GHG emissions and improving energy efficiency • Securing new growth engines • Governance • Risk Management	• The IR conferences hosted by DL (parent company) • Operating BOD subcommittees • Disclosing financial information • Publishing the Sustainability Report
Suppliers	• Providers and transporters of resources/parts required for our business and influencers on quality of our products and services	• Supplier conferences • Cyber Whistleblowing Center on our website	• Employee health and safety • Sustainable supply chain • Resource circulation	• Formulating and sharing the supplier code of conduct • Supporting for ESG training • Supporting for health and safety competency-building
Local Communities	• Entities, including residents near our worksites, who are affected by our business activities	• Website • Social contribution activities • In-kind donations	• Minimizing environmental impact • Hazardous chemical management	• Communicating with local communities • Conducting social contribution activities • Enhancing the chemical management system
Public Sector	• Entities who influence our business by enacting relevant laws and making regulatory decisions	• Press releases • Participation in government policies and projects • Industry conferences • Participation in conferences and seminars	• Governance • Ethics and integrity • Compliance management	• Identifying global ESG regulations and trends • Rendering assistance when major industrial issues arose • Reviewing the participation in national projects • Operating audit and compliance organizations • Fulfilling the taxation duty timely and accurately

DOUBLE MATERIALITY ASSESSMENT

Every year, DL Chemical identifies key topics to prioritize in its sustainability management efforts. For the 2023 materiality assessment, an ESG pool of 23 issues were specified based on global disclosure requirements (GRI Standards, UN SDGs, and SASB), media, and industry analysis. In particular, we conducted a double materiality assessment, a process that considers both the impact of the company's business operations on the environment and society (Inside-out perspective) and the impact of sustainability issues on the company's finance and business (Outside-in perspective). Through this, we quantified impact and financial materiality and selected sic material issues that require a priority response to enhance our sustainability.

Double Materiality Assessment Results and Metrics

Identifying ESG issues and preparing an issue pool

Analysis of domestic and international metrics requiring disclosure and major issues in the petrochemical industry;
A pool of 23 issues was prepared through media analysis

[Metrics requiring disclosure]
GRI Standards, UN SDGs, TCFD, K-ESG, KCGS, SASB

[Companies benchmarked]
Nine in the similar industries, local and abroad

Impact Materiality

- Domestic and overseas ESG Standards
- Stakeholder surveys
  - ✓ Internal stakeholders (Positive/Negative)
  - ✓ External stakeholders (Positive/Negative)

Financial Materiality

- DL Chemical's key issues of previous years
- Benchmarking similar companies
- Stakeholder surveys
  - ✓ Internal stakeholders (Positive/Negative)
  - ✓ External stakeholders (Positive/Negative)

Validation

- Conducted a double materiality assessment on the issue pool of 23 items considering 'environmental & social impact' and 'financial impact'
- Identified 6 material issues with the highest priority
- Conducted internal review considering the company's business, management strategy, and industry, to confirm the issues' validity

2023 Issue Pool Composition

E

ENVIRONMENTAL

- Reducing energy use and improving energy efficiency
- Reducing GHG emissions
- Climate change risk response and net zero strategies
- Minimizing environmental impact
- Managing hazardous chemicals
- Conserving and recovering biodiversity
- Developing eco-friendly technology
- Developing sustainable products (eco-friendly)
- Managing quality and accountability
- Responding to environmental policies and regulations

S

SOCIAL

- Supply chain risk management
- Reinforcing suppliers' ESG competencies
- Building employee competencies
- Talent management and retention
- No forced or child labor
- Occupational safety training
- Advancing occupational safety management system
- Assessing occupational safety risks
- Engaging and communicating with local communities
- Implementing socially responsible management

G

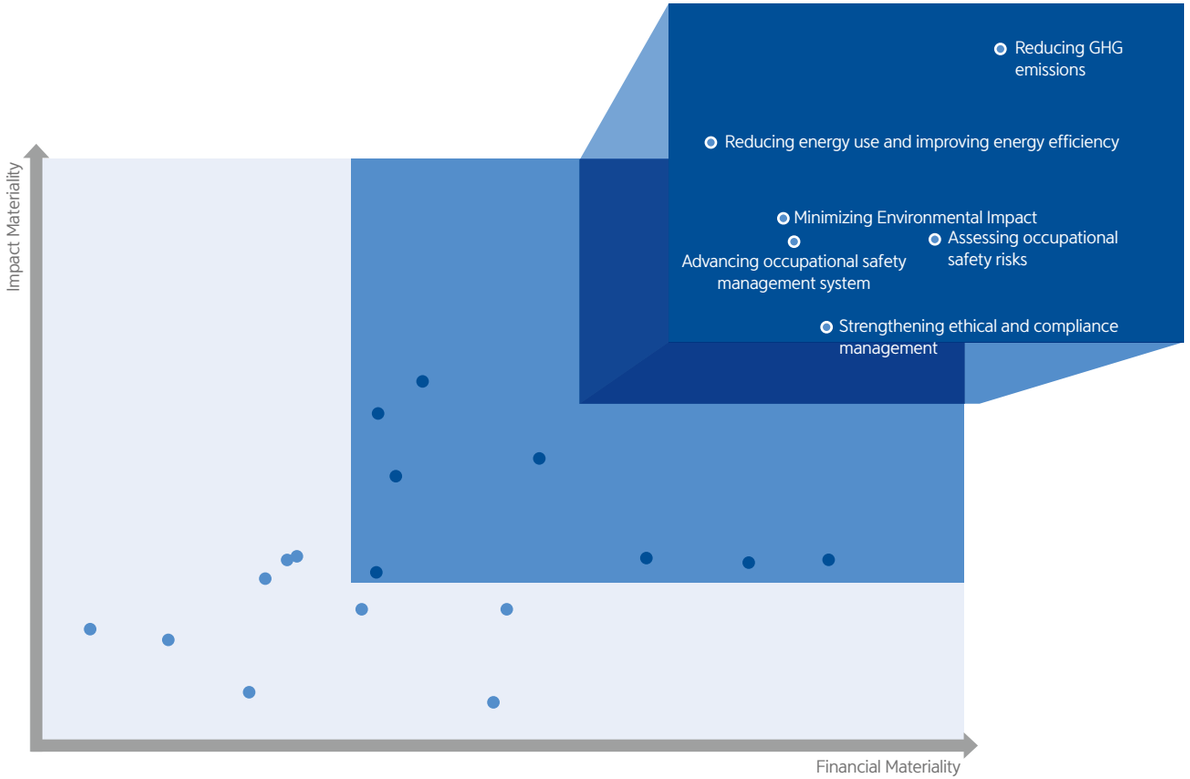
GOVERNANCE

- Strengthening BOD diversity, independence, and transparency
- Strengthening ethical and compliance management
- Securing new growth engines

DOUBLE MATERIALITY ASSESSMENT

DL Chemical identified six material ESG issues out of a pool of 23 through double materiality assessment. Key achievements and activities for the selected material issues will be reported through the Sustainability Report in 2024, and issues that could potentially affect business activities will be continuously monitored. The materiality assessment revealed the 'GHG emission reduction' issue as the most critical. This reflects the special characteristics of the petrochemical industry, and we plan to respond by establishing a long-term Carbon Neutrality Roadmap. Meanwhile, the rankings of the 'new growth engines' and 'eco-friendly products' issues decreased compared to the previous year. This is interpreted as a result of stakeholders' concerns about DL Chemical's future growth being alleviated after disclosing a sustainable business strategy, including the acquisition of Kraton, last year. On the other hand, as corporate ethics issues have become a widespread societal concern, the ranking of the 'strengthening ethical and compliance management' issue has risen. To address this, DL Chemical operates compliance management systems under the Jeong-Do Management System, including ISO 37301 and CP programs. Going forward, DL Chemical will continue to prioritize and strengthen activities related to the areas identified as material issues, in alignment with the demands of internal and external stakeholders.

Double Materiality Assessment Results Metrix



Key Issues and Reporting Boundary

	1st	2nd	3rd	4th	5th	6th
2022	Employee health and safety	Resource circulation	Eco-friendly products	Chemical management	New growth engines	GHG emission reduction and improving energy efficiency
2023	Reducing GHG emissions (▲5) GRI-403	Assessing occupational risks (▼1) GRI-301	Reducing energy use and improving energy efficiency (▲3) Non-GRI	Minimizing Environmental impact (-) Non-GRI	Advancing occupational safety management systems (▼5) Non-GRI	Strengthening ethical and compliance management (New) GRI-302, 305
	Page 28~29p	Page 39~41p	Page 28p	Page 30~33p	Page 37~39p	Page 65~70p

DOUBLE MATERIALITY ASSESSMENT

Materiality Assessment Results

Impact Levels: ●●● (High 30%) ●●○ (Medium 40%) ●○○ (Low 30%)

No.	Domain	Issue	Impact Materiality	Financial Materiality	Double Materiality	GRI Matching	Page in the Report
1	E	Reducing GHG emissions	●●●	●●●	●●●	305-5	28p
2	S	Assessing occupational safety risks	●●●	●●●	●●●	403-1~2	39~41p
3	E	Reducing energy use and improve energy efficiency	●●●	●●○	●●●	302-4	28p
4	E	Minimizing environmental impact	●●●	●●○	●●●	303-2, 306-2	30~33p
5	S	Advancing occupational safety management systems	●●●	●●●	●●●	403-1	37~39p
6	G	Strengthening ethical and compliance management	●●○	●●●	●●●	205-1~2	65~70p
7	S	Managing and retaining talent	●●○	●●●	●●○	401-1	45~51p
8	E	Responding to environmental policies and regulations	●●●	●●○	●●○	2-27	25p, 34p
9	E	Developing sustainable products (eco-friendly)	●●○	●●●	●●○	305-3	8p, 10~13p
10	E	Climate change risk response and net zero strategies	●●○	●●○	●●○	305-5	16p, 28~29p
11	S	Occupational safety training	●●○	●●○	●●○	403-5	41p
12	E	Managing hazardous chemicals	●●○	●●○	●●○	-	34-35p
13	E	Managing quality and accountability	●●○	●●○	●●○	416-1~2, 417-1	32p, 38p
14	G	Securing new growth engines	●○○	●●○	●●○	2-22	8p, 10~13p
15	E	Developing eco-friendly technology	●●○	●●○	●●○	-	8p, 10~13p
16	S	Engaging and communicating with local communities	●●○	●○○	●●○	413-1	52~53p
17	G	Strengthening BOD diversity, independence, and transparency	●●○	●○○	●○○	2-9, 2-17	61~63p
18	S	Supply chain risk management	●○○	●○○	●○○	308-2, 414-2	56~59p
19	S	No forced or child labor	●○○	●○○	●○○	408-1, 409-1	42p
20	S	Building employee competencies	●○○	●○○	●○○	404-1~3	45~47p
21	S	Implementing socially responsible management	●○○	●○○	●○○	2-23	15p
22	S	Reinforcing suppliers' ESG competencies	●○○	●○○	●○○	308-2, 414-2	56~59p
23	E	Conserving and recovering biodiversity	●○○	●○○	●○○	101-1~8	-

WHAT WE HAVE DONE FOR ESG

CHANGE FOR PLANET

DL Chemical manages the impacts on water, waste, air, and soil that may arise from its business activities under an integrated environmental management system.
Furthermore, the company actively participates in climate change response, which requires global cooperation, and continues its multifaceted efforts to minimize environmental impact.

24 Environmental Management
28 Climate Change Response
30 Minimization of Environmental Impact
34 Strengthening Chemical Management

ENVIRONMENTAL MANAGEMENT

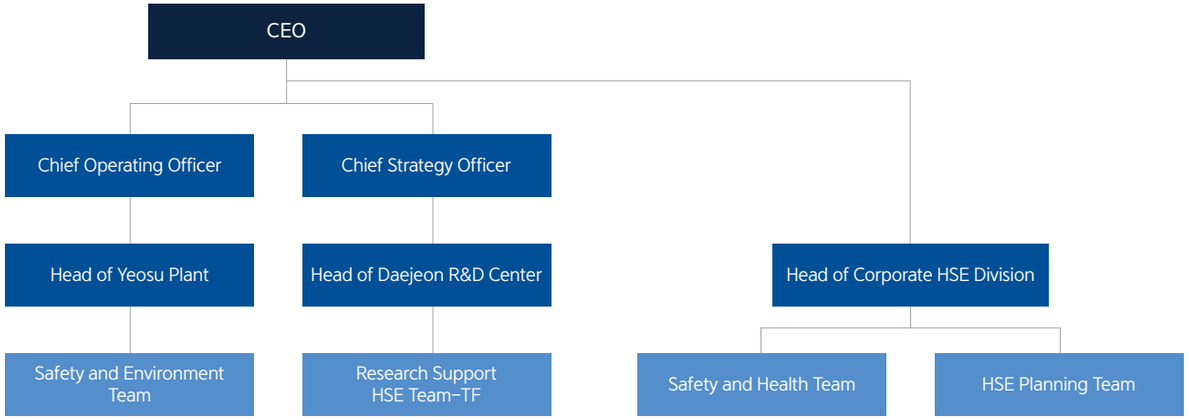
Environmental Management Implementation Framework

- Establishment of an environmental management framework to minimize social/environmental impacts that may arise from business activities
- Operating an environmental management system in line with ISO 14001 requirements and laws
- Establishment of environmental management goals and KPIs based on the environmental management system

Environmental Management Focus Areas

- Water Resources
- Waste Generation
- Air Pollution
- Soil Contamination

Environmental Management Governance



Goals for Environmental Management and KPIs

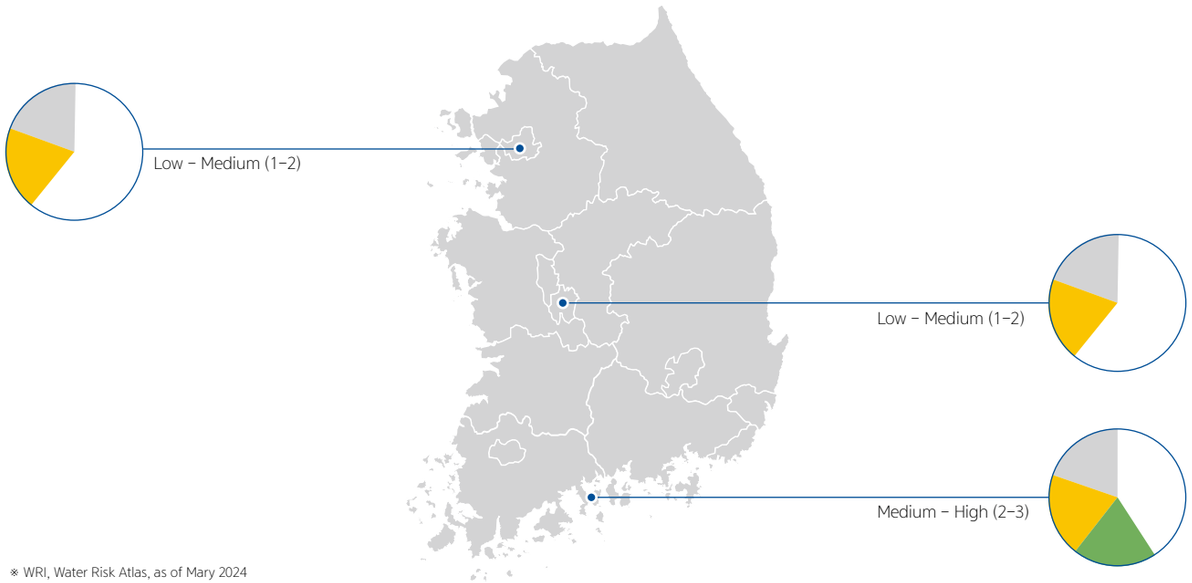
Company-wide HSE goals	Mid- to long-term strategy(2024~2026)	Key tasks in 2024	Goals	KPI
ZERO Fatality : Zero-Accident Zero-Contamination Zero-Disease	• [Safety] Establish a self-regulated prevention system to achieve zero serious accident • [Health] Promote employee health through prevention-oriented health management • [Environment] Implement a sustainable, green management framework	• Advance the HSE system • Realize advanced/scientific operation and management • Raise awareness of HSE and motivate	• Compliance • Minimization of environmental impact • Response to climate change • Prevention of environmental incidents	• Compliance • Management of air pollutant emissions • Environmental metrics improvement rate • Implementation of chemical inventory and enhancement of employees' awareness

ENVIRONMENTAL MANAGEMENT

Water Resources

- To prevent water pollutants generated in the process from leaking out, DL Chemical manages wastewater pipes and treats them by flowing them into public wastewater treatment facilities.
- DL Chemical installs a pH meter in the final rainwater pipeline to constantly monitor the water quality, check the properties (pH, TOC, SS) of the final treated water at the wastewater treatment plant daily, and manage non-point pollutant sources within the work site.
- When pursuing a new business, we check the WRI water stress index of the relevant region for water resource risk management. Currently, there are no high-risk (3 – 4) work sites.

Water-related risks at domestic work sites



※ WRI, Water Risk Atlas, as of Mary 2024

Low	Low – Medium	Medium – High	High	Extremely High
(0–1)	(1–2)	(2–3)	(3–4)	(4–5)

Waste

- When selecting a waste management company, we check whether they have obtained statutory permits and adequate capacity and regularly check whether they process wastes in compliance with waste treatment standards.
- DL Chemical promotes waste recycling that is otherwise incinerated or landfilled for eco-friendly disposal. We also work to minimize the generation of designated waste by improving treatment methods for oil, organic solvents, oil drums, and catalyst drums.
- We are looking for recycling firms to improve the waste recycling rate.

Air Pollution

- At each work site, we regularly self-measure air pollutants and inspect fugitive emission sources for fugitive emissions at least once a year to minimize harmful air pollutants flying from process valves, flanges, and pumps.
- We installed a pollutant collection facility (in 2022) to reduce pollutants (dust, THC) intermittently emitted into the atmosphere from the HDPE production and packaging process.
- We invest in, monitor, and manage facilities to reduce air pollutants.

Soil Contamination

- DL Chemical regularly monitors facilities subject to soil contamination management to check for corrosion and dam leaks and manage old facilities to prevent soil contamination.
- Through specialized agencies, we inspect the soil contamination level of facilities that store or handle substances that cause soil contamination.
- If contamination is found during an inspection, we investigate the cause of the leak, prepare measures to prevent a recurrence and restore the contaminated soil through a professional purification company.

ENVIRONMENTAL MANAGEMENT

Statutory Environmental Education

- Compliance with environmental regulations through mandatory training completion

Statutory environmental training provided in 2023

Work Site	Training Program	Cycle	Training Hours
Yeosu Plant	Chemical safety training for employees	Annual	2 hours
	Integrated environmental manager qualification course	Once every two year	Initial: 40 hours Refresh: 24 hours
	Refresher training for environmental technicians	Once every three years	Advanced – air/water quality: 4 days General– air/water quality: 2 days
	Technician and manager course (hazardous chemicals)	Once every two year	16 hours
	Safety for hazardous chemical handlers	Once every two year	16 hours
	Waste discharger	Once every three years	4 hours
Daejeon R&D Center	Refresher training for environmental technicians	Once every three years	General – air: 2 days General – water quality (delegation – exemption): 1 day
	Waste discharger	Once every three years	4 hours

Education on HSEQ (Health, Safety, Environmental, Quality) Management System

- DL Chemical conducts HSEQ management system training for managers and working-level staff on.
- We provide external training to environmental staff for personal skill development.

Education on HSEQ Management System

Category	unit	Executives	Leaders	Working-level employees
HQs	Person	15	18	10
Yeosu Plant	Person	3	16	35
Daejeon R&D Center	Person	1	14	16
Total	Person	19	48	61

Managers

1. ISO management system – goals and success factors
2. ISO management system – core concepts
3. Utilization of the ISO management system certification

Working-level employees

1. ISO 9001:2015/ ISO 14001:2015/ ISO 45001:2018 requirements
2. Inadequacies and case study
3. Preparation for ISO audit
4. Workshops for role play and feedback



Education on safety and environmental quality management system

ENVIRONMENTAL MANAGEMENT

Communication with Stakeholders on Environmental Issues

- DL Chemical enhances employee environmental awareness through regular internal reporting and the sharing of environmental management system performance.
- We also communicate with external stakeholders through council meetings involving the local government, communities, and the industry.

Communication with Internal/External Stakeholders

	Category	Description	Cycle
Internal	Environmental policies	Establishing and sharing HSEQ policies	When changed
	Environmental goals	Establishing and sharing enterprise-wide environmental KPIs	Annual
		Sharing KPI and measurement/monitoring results	Quarterly
		KPI compliance review	Twice a year
	Environmental management system	Sharing internal/external audit results of the environmental management system, and follow-up	Twice a year
		Reporting and Sharing management review results	Annual
		Registering new items, and managing and disseminating the company regulatory registry	Quarterly
		Evaluating environmental regulation compliance, result sharing, and other follow-ups	Annual
		Conducting environmental impact assessments and providing training	Regular: Every 3 years after the initial one Ad hoc: Occasionally
		Conducting internal environmental training for employees	Annual
		Revising and sharing environmental procedures	Annual
External	Local governments	Reporting on chemical substance statistics	Once every two years
		Submitting chemical emission reports	Annual
		Reporting on performance related to hazardous chemicals	Annual
		Reporting on waste generation and treatment performance	Annual
		Submitting air pollutant emission statement	Annual
		Conducting and submitting nationwide pollutant source survey	Annual
	Korea Responsible Care Council	Participating in the KRCC committee	Quarterly
	Korea Petrochemical Industry Association	Participating in the Korea Petrochemical Association's environmental and climate change response committee	Quarterly
	Local communities	Notifying the local community of chemical accidents prevention management plans	Annual
		Registering/verifying in the environmental information disclosure system	Annual
	Common (including clients)	Publishing the Sustainability Report	Annual
		Obtaining the ISO management system certification	Annual
		Obtaining the GRS certification	Annual

CLIMATE CHANGE RESPONSE

GHG and Energy Management

- DL Chemical established a goal of reducing Scope 1&2 (direct and indirect emissions) emissions intensity by 21% by 2030 compared to 2022 and promote reduction activities.
- We are identifying mid- to long-term reduction measures through Scope 3 (other indirect emissions) calculations and status analysis.
- We consider conducting climate change risk analysis and assessment.

GHG emissions and energy use trends

Category	Unit	2021	2022	2023
GHG emissions(Scope 1&2)	tCO_2-eq	249,734	222,822	216,120
GHG emissions intensity*	tCO_2-eq/Mt	-	0.311	0.310
Energy consumption	TJ	4,899	4,344	4,193
Energy use intensity	GJ/Mt	-	6.080	5.975

*GHG and energy intensity : GHG emissions and energy consumption per unit of production (Yeosu plant)

Total GHG emissions trends (Scope1&2)

(Unit: tCO_2-eq)



GHG Reduction Activities

- DL Chemical conduct an energy audit at Yeosu Plant's four work sites every five years to reduce energy use and increase efficiency.
- By implementing 9 out of 15 improvement plans derived from the energy audit conducted in 2018, we saved approximately KRW 650 million.
- By carrying out improvement tasks, such as facility replacement and process optimization, we reduced GHG emissions by 1,755 tCO_2-eq in 2023.
- We will continue to carry out GHG reduction activities, including pursuing long-term new green businesses at the group level, investing in energy-saving projects

Improvement in energy efficiency following an energy audit

Year	Improvement	Unit	GHG Reduction
2021	Reduced the amount of steam by regulating the temperature by flash chamber grade	tCO_2-eq	256
	Saved electricity by adjusting the compressor operation		453
	Saved electricity by downsizing the pump impeller		68
	Saved electricity by revamping		4,567
	Reduced steam use by installing a purge drum		2,214
	Reduce steam use in the tower re-heater		255
	Reduced the amount of steam by regulating the tower operating temperature		496
	Reduce steam use by recovering condensate flash steam		651
	Reduce high-pressure steam use by regulating the distillation tower feedstock temperature		42
	Reduce high-press steam used in the downstream heat exchanger by maximizing the use of electric heat exchangers		55
	Saved electricity by shortening the stirrer operation time inside the product tank		13
	Reduced steam use by adjusting the high-pressure steam use for each EPO grade		54
	Saved electricity by changing the lighting type in the Yongseong manual warehouse		38
2022	Saved electricity by optimizing (reducing) pressure at the back end of the compressor		70
	Saved electricity by optimizing the stirrer and pump inside the storage tank		131
	Saved electricity by reducing the compressor flow		88
	Saved electricity by optimizing the pump capacity		101
	Optimized MS use by replacing leaking valves		670
	Reduced high-pressure steam use by regulating the feedstock temperature in the vacuum distillation tower		78
	Reduced steam use of the re-heater in the distillation tower		375
	Reduced mid- to low-pressure steam use by lowering the purified hexane ratio to lower circulation flow		277
	Saved electricity by optimizing operating settings for each compressor by grade		587
	Saved energy by agitating the storage tank after stopping the reprocess		82
	Saved electricity by replacing coolant pumps with highly efficient ones		278
2023	Saved electricity and improved operational stability by replacing aging blowers		79
	Saved electricity by improving compressor circulation load and compression ratio		53
	Saved electricity by optimizing lighting		2
	Saved energy by separating the operation of the steam tracing manifold by season		42
	Saved energy by changing the operating temperature and reducing the operating pump quantity after improving the purification system		1,225
	Saved electricity by changing the number of reactor circulation pumps		354

※Each reduction is based on the previous year

CLIMATE CHANGE RESPONSE

GHG Reduction Plan

- DL Chemical updated the status and established an improvement plan after conducting an energy audit in 2023.
- By investing in and improving facilities for 13 improvement items, we plan to save approximately KRW 460 million and approximately 31,635 TJ annually, reducing GHG emissions by 506 tCO_2-eq by 2027.

2023 Energy Audit Results and Improvement Plan

Target Year	Improvement Plan	Annual Savings (Unit: TJ)	Estimated Annual Savings (Unit: KRW mil.)
2024	Replace coolant pumps with highly efficient ones.	5,321	61.1
2024	Coat inside the high-capacity pump.	0.569	5.3
2027	Insulate onsite facility surfaces to prevent heat dissipation loss.	0.377	9.8
2024, 2027	Reduce heat dissipation loss by applying a heat barrier.	0.075	2.3
2025	Replace the pump with ones meeting the head requirement.	0.942	11.4
2026	Reduce heat dissipation loss from extruders.	1.017	11.7
2026	Coat inside the high-capacity pump.	1.344	15.4
2026	Replace blowers with highly efficient turbo blowers.	13.448	154.6
2027	Raising the process N2 temperature with a condensate heat source.	0.846	23.9
2027	Improve the vacuum pump efficiency.	0.703	6.6
2027	Use the overhead's high temperature as a heat source for fluid feed.	3.174	94.9
2027	Coat inside the high-capacity pump.	2.596	29.8
2027	Replace lighting with high-efficient LEDs on work sites.	1.223	31.3
	Total	31,635	458.1

Scope 3 (Other indirect emissions) Emission Management

- To reach our goal of carbon neutrality in the mid- to long-term, we selected 8 out of 15 categories under the Scope 3 GHG Protocol and proceeded with data analysis and calculation.
- The reliability of the calculation is ensured through voluntary verification.
- We transparently disclose Scope 3 calculation information to stakeholders.

Scope 3 Emission Trends

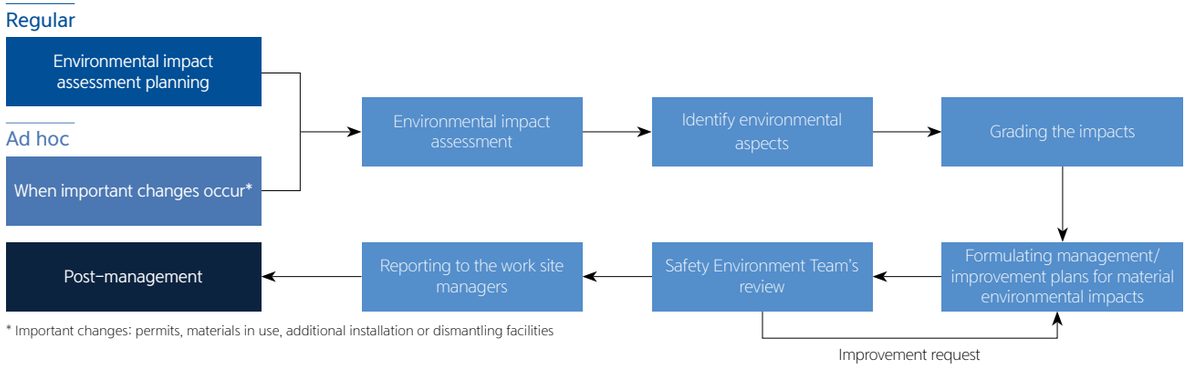
Category	Unit	2021	2022	2023
Purchased goods and services	tCO_2-eq	2,387,459	2,159,327	1,955,385
Capital goods		639	1,003	1,538
Fuel- and energy-related activities		7,355	6,455	6,494
Upstream transportation and distribution		20,784	20,679	16,873
Waste generated		2,045	2,335	2,126
Employee business travel		78	268	448
Employee commuting		392	396	410
Downstream transportation and distribution		10,079	14,380	19,615
Total		2,428,831	2,204,843	2,002,889

MINIMIZATION OF ENVIRONMENTAL IMPACT

Environmental Impact Assessment Process

- DL Chemical conducts regular environmental impact assessments on a three-year cycle to identify environmental impacts that may occur as a result of management activities and establish improvement measures.
- We establish and implement response plans that consider environmental impacts through ad hoc environmental impact assessments when major changes occur.
- Once the environmental impact assessments from the relevant departments are completed, the Safety Environment Organization reviews and supplements the results to improve the effectiveness and feasibility of environmental impact improvement measures.

Environmental Impact Assessment Process



* Important changes: permits, materials in use, additional installation or dismantling facilities

Result of the 2023 Environmental Impact Assessment

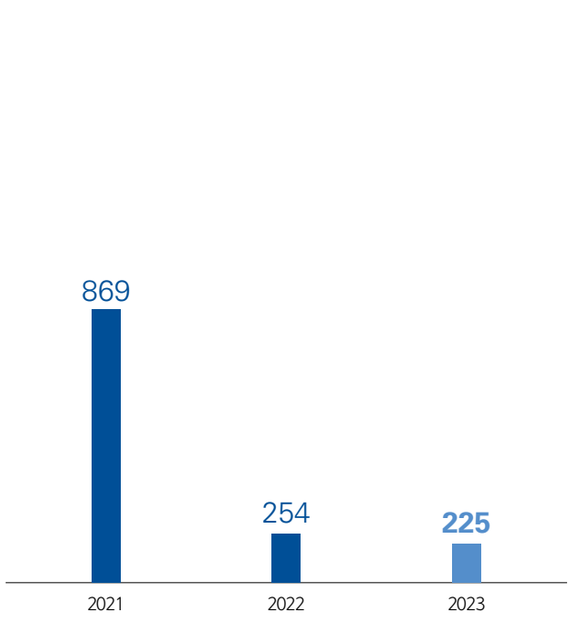
Category	Ad Hoc (no. of assessments)	Unit	Regular
PE1	3	Case	Not applicable for 2023
PE2	2	Case	
PB1	-	Case	
PB2	-	Case	
EPO	2	Case	

Reduction of Environmental Impact and Compensation for Pollution-related Damages

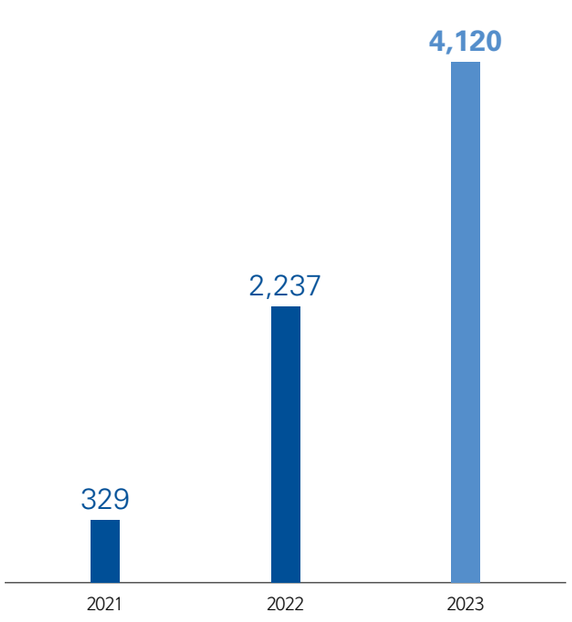
- By investing in and maintaining pollution prevention and discharge facilities, we are minimizing our environmental impact.
- DL Chemical monitors pollutants released into the environment.
- We continued our efforts to reduce our environmental impact through continuous investments, such as installing a regenerative thermal oxidizer (RTO)* that removes total hydrocarbon (THC) and volatile organic compounds (VOCs) and replacing old facilities. (2023)
- We maintain environmental liability insurance to ensure a prompt response and damage relief for environmental pollution that may occur during operations.

*(RTO: A device that directly heats and regenerates heat storage materials, such as ceramics, with a large surface area to recover as much of the waste heat of the exhaust gas generated while incinerating substances, such as VOCs, and use the recovered heat for preheating the intake gas

Environmental operating cost (Unit: KRW mil.)



Environmental investment (Unit: KRW mil.)



MINIMIZATION OF ENVIRONMENTAL IMPACT

Waste Management Framework and Reduction Goals

- DL Chemical identifies and implements improvement tasks to minimize waste generated from production activities.
- Waste generated at the work site is treated under the Waste Management Act.
- When selecting waste disposal contractors, we conduct on-site inspection before finalizing contracts to verify their waste handling capabilities.
- We work to increase the recycling rate rather than landfill or incineration, which has a higher environmental burden, during waste disposal.
- We make effort to reduce waste generation by managing the intensity indicators starting in 2024.

2023 Waste Improvement Tasks and Performance

Tasks	Unit	Waste Reduction
Reduce activated carbon by recovering silo vent gases.	TON	23.5
Prevent unplanned operation stoppages and reduce scrap generation by strengthening the PM of extruders and surrounding facilities.	TON	147.0
Improve the blender washing slurry processing method.	TON	3.0

Trends in Waste Generation

Category		Unit	2021	2022	2023
Total waste discharge		TON	5,959	11,460	6,683
Treatment	Incineration	TON	218	207	300
	Landfill	TON	3,096	3,853	2,771
	Recycle	TON	2,645	7,400	3,612
	Recycling rate	%	44	65*	54

* The amount of recycled construction waste increased significantly following construction projects.

Discovery of Recycling Companies

Waste Management Company	Improvement	Effects
Improved PB-mixed waste and waste drum disposal methods	• We discovered a company that could recycle PB-mixed waste and waste drums that had previously been incinerated. We requested an analysis of the waste sample. • As of August 2023, the waste disposal method was changed from 'incineration' to 'recycling.'	• Raised the waste recycling rate (PB1: 0% →50%) • Reduced waste treatment costs (approximately KRW 13 million/year)

GHG emission reduction through recycling 3,600 tons of waste in '23

Approx. 5,882 tCO_2eq = 35,000 pine trees

Positive effect of planting

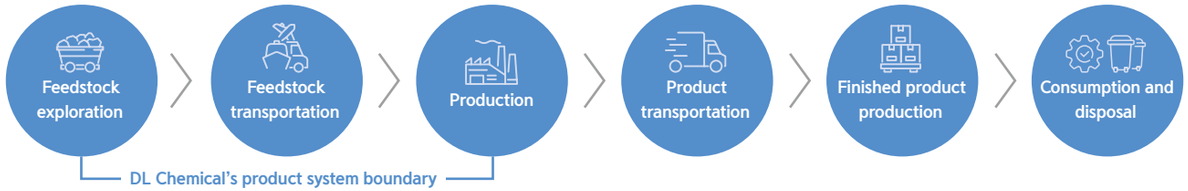


MINIMIZATION OF ENVIRONMENTAL IMPACT

Minimization of Products' Environmental Impact

- To reduce the environmental impact that may arise from the production and use of products, we conduct an environmental impact assessment, from feedstock exploration to the production phase, based on international standards (ISO 14040, 14044, 14067).
- DL Chemical measures products' environmental impact throughout the production process based on input, output, and transportation data related to the 10 major environmental impact categories.
- All PE and EPO products undergo a Life-Cycle Assessment (LCA) and third-party verification (PB products were assessed in 2022).
- We communicate transparently with stakeholders by providing product carbon emission information to customers pursuing carbon neutrality.
- LCA results are updated periodically (3-year cycle).
- To reduce the environmental burden of our products, we are expanding R&D into the use of bio feedstock and the production of low-energy, eco-friendly products.

Scope of Petrochemical Product LCA



LCA Process

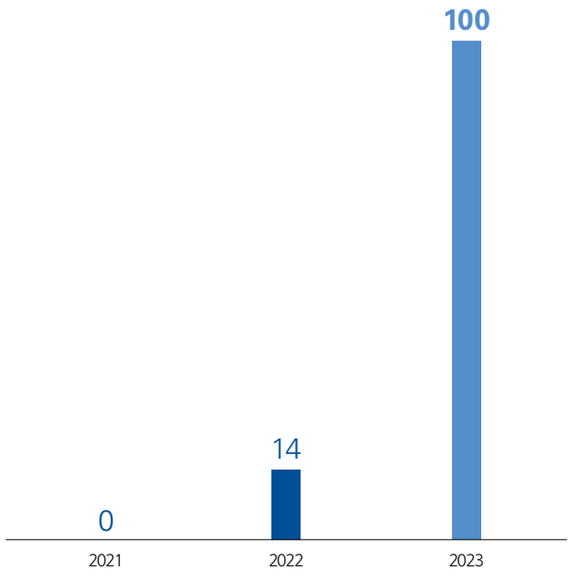
Product/production process analysis	Input/output data collection	Data review and process, such as mass balance causality	Identification of products' environmental impact	Results analysis and 3rd-Party verification
• Define target products' function, functional unit, and standard flow • Set system boundaries • Identify production process input/output	• Feedstock consumption, energy/utility consumption, waste discharge • Feedstock/product distribution data	• Mass balance review of inputs/outputs	• Identify potential environmental impacts • Identify major environmental issues by product impact category • Identify the causes of major environmental issues	• Assess products' environmental impact and generate environmental information. • Establish measures to improve product eco-friendliness. • Perform third-party verification of LCA results.

LCA Performance

Category		Unit	No. of Assessments and Verifications
PE	HDPE	Case	25
	LLDPE	Case	54
PB	C-PB	Case	9
	HRPB	Case	5
EPO		Case	6
Total		Case	99

LCA Performance Rates

(Unit: %)



An LCA Report

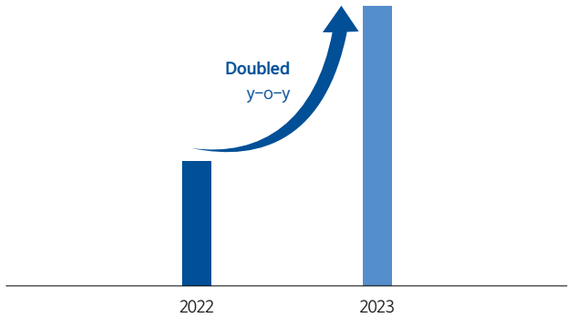


MINIMIZATION OF ENVIRONMENTAL IMPACT

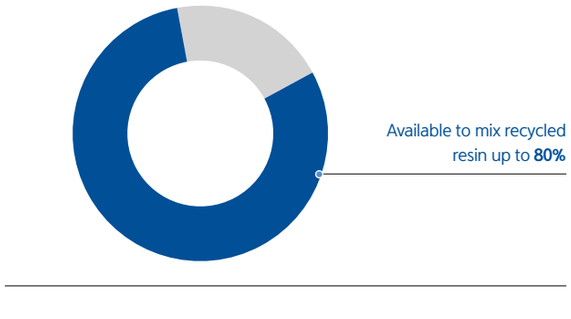
Minimization of Products' Environmental Impact

- DL Chemical is implementing development of recycled plastic products and solutions to reduce environmental impact on raw material and end-of-life stage.
- DL Chemical's recycle product acquired a GRS (International Recycling Standard) certificate, a global eco-friendly certification in 2022, which has been continuously updated since then.
- We make various attempts to expand applications, such as upcycling wallets that mix artificial leather with recycled vinyl and cosmetic tube containers.

Sales of recycling-related products



Recycled resin mixing ratio





Applied to cosmetics packaging



Applied to purse upcycling

GRS Certificates



STRENGTHENING CHEMICAL MANAGEMENT

Hazardous Chemicals Management Framework

- DL Chemical complies with domestic and foreign laws and regulations (on the purchase, use, and storage of chemicals) to minimize risks arising from using chemicals in the workplace and prevent relevant accidents.
- Before introducing new chemicals, we systematically analyze HSE-related risks through the Change Management Committee led by worksite managers, review safety measures, and determine the introduction.
- We ensure a safe working environment for our employees by applying a chemical preliminary review system utilizing the integrated HSE Portal and conducting more thorough monitoring of regulated substances. We will work to comply with licensing requirements, improve onsite facilities, and manage changes. (2024)

Advancing the chemical management framework

Yeosu Plant + Daejeon R&D Center	Daejeon R&D Center
Introduced the chemical pre-review system (added the process of reviewing materials before purchasing) and is monitoring through integration with regulatory DB(DataBase).	Established an inventory of chemicals and is training researchers to raise awareness

Applicable Standards for Change Management

Category	Changes	Changes		Target of Change Review	MOC Class	Change Management Committee
		No	Details			
Chemicals	New chemicals	1	The NFPA health/fire/reactivity indices of the substances included in the MSDS are 3 or higher.	●	2	●
		2	one of the substances included in the MSDS have two or more NFPA health/fire/reactivity indices of 3 or higher.	●	2	
	Existing chemicals	3	When adding a substance	●	2	
		4	When changing a substance's content - Excluding cases where it is determined during prior review that changes in content do not require permission or action (work environment measurement) under the relevant law (Chemical Substances Control Act)	●	2	

Chemical Management Process

- DL Chemical operates a management process for each stage of chemical handling.
- The chemical management process comprises pre-assessment, warehousing/transportation management, delivery/disposal management, reporting and notification, and emergencies. At each stage, we prevent accidents through working-level employee training and inspections and minimize damage through accident response drills.

Process	Description
01 Pre-assessment	• Review laws and regulations before purchasing new chemicals and products. • When introducing a new chemical substance, evaluate its safety through change management and the change management committee. • Assess chemical risks and take remedial action.
02 Warehousing/transportation management	• Observe handling standards during unloading, warehousing, and transportation (with the hazardous chemical manager present). • Manage chemical inventory status. • Provide training and monitor hazardous chemical handlers. • Self-inspect hazardous chemical-handling facilities. • Carry out activities to reduce chemical discharges.
03 Delivery/disposal management	• Manage the daily and monthly handling volume of hazardous chemicals. • Perform daily inspections of vehicles and train drivers. • Have the workers follow hazardous chemical handling standards and wear protective gear. • Implement the chemical accident prevention and management plan and check its implementation.
04 Reporting and notification	• Check the chemical's manufacturing and import details. • Conduct a statistical survey on chemical substances. • Report hazardous chemical-related performance. • Register chemicals. • Investigate chemical discharges.
05 Emergencies	• Conduct emergency drills in preparation for chemical accidents. • Report chemical accidents to the relevant agencies.

Hazardous Chemical Spill/Leakage Drills

- DL Chemical establishes an emergency response system to prevent and effectively respond to environmental and chemical accidents.
- We provide statutory training, such as employee safety training, guidance on safe chemical handling, understanding laws, evacuation, and wearing protective equipment.
- We establish an annual emergency drill plan and provide training to strengthen emergency responsiveness.



Emergency drill at PE1 Plant in 2023

STRENGTHENING CHEMICAL MANAGEMENT

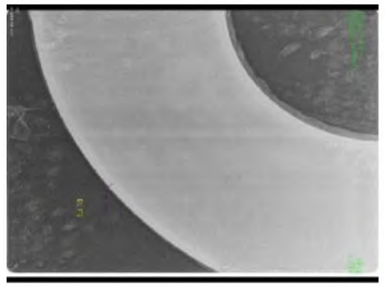
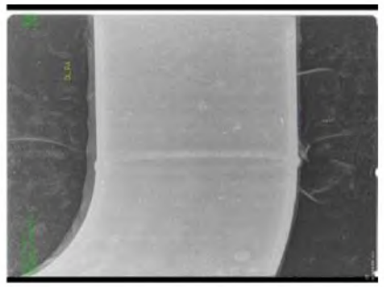
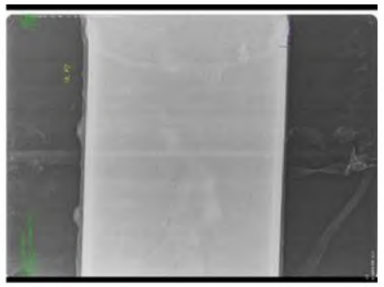
Strengthening the Management of Hazardous Chemical Facilities

- DL Chemical has strengthened inspections of chemical facilities to identify the possibility of chemical accidents in advance and prevent them.
- We regularly inspect the external pipeline installed to exchange high-pressure gases, chemicals, and hazardous materials with neighboring companies in the Yeosu Petrochemical Industrial Complex (annual).
- A professional company inspects all piping for damage. It measures the thickness of some sections using ultrasonic waves to manage the corrosion rate.
- We introduced DCVG (Direct Current Voltage Gradient) testing to increase the inspection accuracy of underground external pipelines and prevent accidents involving chemical leaks.

Pipe Inspections

Inspection Type	Cycle	Performance	No. of Actions Taken
Routine	Daily	65 times	2
Precise	Annual	Once	23
Underground piping (DCVG)	-	Once	-

Piping RT (Radiographic Test) Result: Good

Strengthening the Management of Hazardous Chemical Handling

- DL Chemical strictly complies with the Chemical Substances Control Act and the Act of Registration and Evaluation of Chemical Substances to minimize legal risks associated with using hazardous chemicals.
- All hazardous chemicals used in the workplace are reported to the Ministry of Environment and transparently disclose the hazards and environmental impacts of chemicals handled through community notices.
- We work to reduce chemical discharges by setting targets and managing performance.
- We are committed to continuous R&D to reduce the amount of hazardous chemicals handled and apply alternative feedstock.
- We are bolstering our management system, including internal audits and monitoring, to ensure a more thorough management of hazardous chemicals.
- Operating the HSE portal enables us to systemize the handling and management of chemical substances and monitor related regulations.

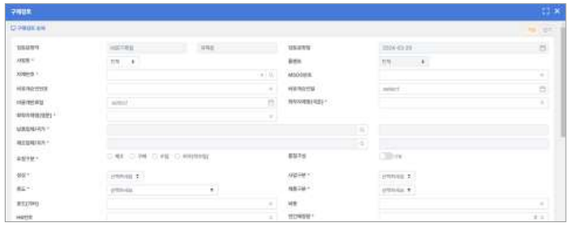
Complying with Domestic/International Chemical Regulations

- By identifying the hazards of chemical substances in our products, we prevent health and environmental problems for customers and employees.
- DL Chemical systematically complies with the Act of Registration and Evaluation of Chemical Substances and the overseas REACH regulations.
- Under the Act of Registration and Evaluation of Chemical Substances, substances requiring registration are identified early and preemptively registered (2024).
- We registered 5 types of chemicals under the EU REACH.
- We monitor trends in evaluation systems, such as EU-REACH, UK REACH, and KKDIK, to prepare for relevant domestic and international laws.

Chemical Regulations DB Management



Request for Preliminary Chemical Review



WHAT WE HAVE DONE FOR ESG

CHANGE FOR PEOPLE

DL Chemical promotes activities and performance management for various stakeholders to create a virtuous cycle of social value.
Starting with health and safety, human rights, and labor relations for its employees, the company pursues a sustainable society through efforts that extend to organizational culture, including social contributions to local communities, and shared growth programs that reach supply chain partners.

37 Health and Safety
42 Human Rights
45 Organizational Culture
56 Shared Growth

HEALTH AND SAFETY

Health and Safety Management Framework

- DL Chemical formed the HSE* Committee, chaired by the CEO, to establish a company-wide safety culture, prevent disasters, and comply with domestic and international laws.
- Under the Occupational Health and Safety Act, we report 'health and safety plans,' covering health and safety-related management policies, organizations, budgets, and major activity plans, to the BOD every year and monitor related plans and results.
- We approved an HSE investment plan for 2023 that represents an increase of approximately 124% over the previous year's performance to strengthen our execution on health and safety.
- To prevent supplier accidents, we evaluate their health and safety management level and select suppliers that meet safety standards before registering them. In addition, we established a safety management procedure for suppliers to ensure suppliers' compliance with safety and health regulations through regular inspections.
- To enhance our supplier employees' health and safety awareness and capabilities, we operate a supplier health and safety training program that includes safety rules, measures to take in case of an accident, safe work procedures, and personal protective equipment.

*HSE: Health, Safety, Environment

Health and Safety Management Policy

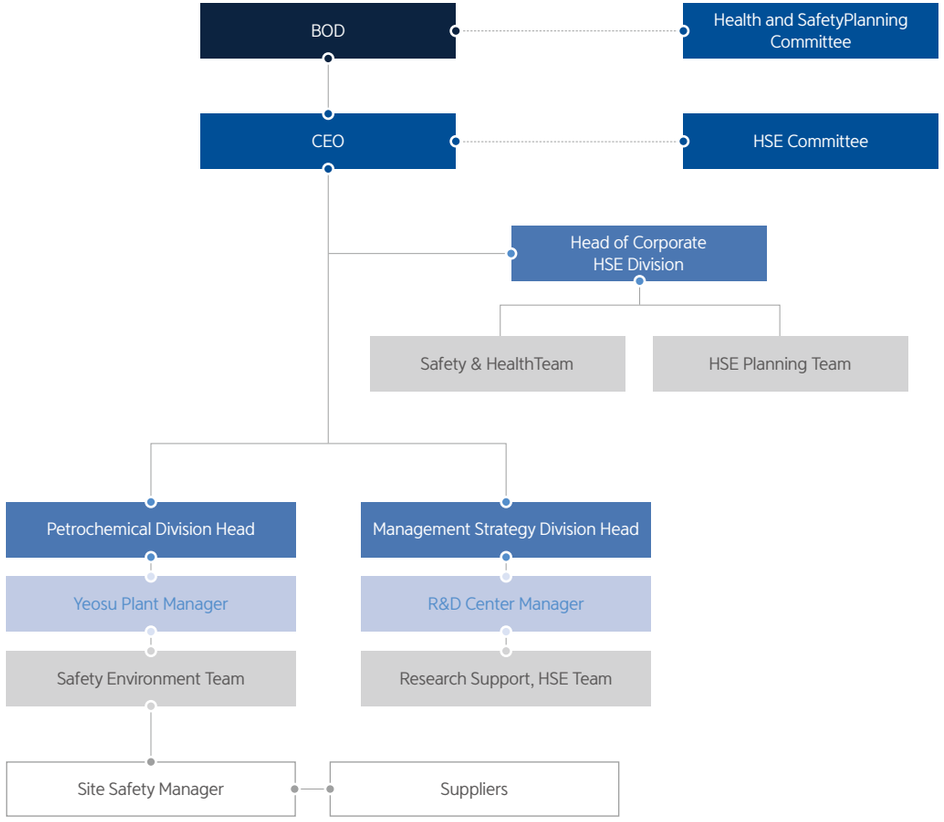
- DL Chemical upholds its HSE&Q* management policies reflecting the management's guiding principles on and firm commitment to health, safety, environment and quality.
- In 2022, member safety, risk mitigation, and recurrence prevention policies were added, reflecting the Serious Accidents Punishment Act requirements and the management's commitment to ESG.

*HSE&Q: Health, Safety, Environment & Quality

HSE Strategy	Strengthening the HSE Accident Prevention Framework	Activating HSE Communication	OEMS Upgrades	Building ESG Capacity
Strategic Initiatives	Bolster responsiveness to the Serious Accidents Punishment Act	HSE Committee	Revise the OEMS and manage the Register of Legislation	Formulate a carbon reduction roadmap
	Establish response measures to serious civil disasters	Operating HSE Committees by production sites	Enhance the internal OEMS audit plan	ESG-conscious customer response: Conduct LCAs on PE and EPO products
	Conduct integrated HSE audits and tighten inspections	Promote activities to spread a safety culture	Provide training to raise OEMS competences	Systematic environmental index management: GHG, energy, and waste

*OEMS: Operational Excellence Management System

Health and Safety Governance



HEALTH AND SAFETY

Health and Safety System

Operational Excellence Management System(OEMS)

- DL Chemical operates the OEMS, an HSE&Q management system, to comply with the requirements concerning establishing and implementing a health and safety management framework under the Serious Accidents Punishment Act.
- We manage the health and safety risks of all stakeholders affected by our business activities by expanding the scope of OEMS applications to customers, employees, government bodies, regulatory agencies, and local communities under ISO standards.
- The OEMS facilitates continuous improvement in the health and safety management system through a continuous cycle of Plan (P), Do (D), Check (C), and Act (A).

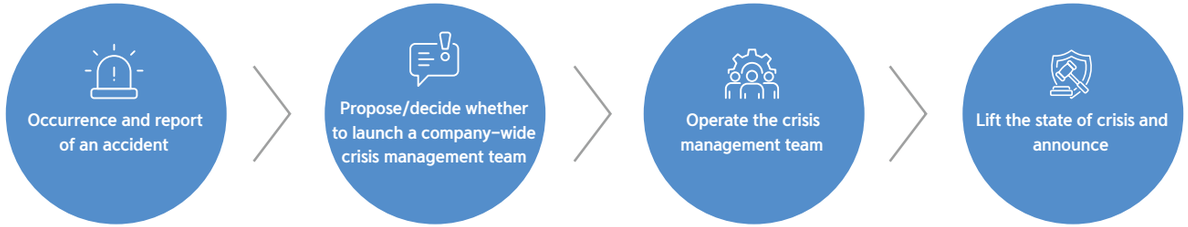
ISO 45001 Certification

- DL Chemical acquired the ISO 45001 certification—an international standard that specifies requirements for an occupational health and safety management system—for the Yeosu Plant and the Daejeon R&D Center, ensuring compliance with the standard's requirements.
- Our health and safety management system aims to fulfill health and safety obligations for all employees and stakeholders in the workplace and achieve zero accidents at all stages, from product development to production and shipment.

Accident Response Framework

- To effectively respond to emergencies, such as fire, explosion, and hazardous chemical leaks, DL Chemical operates an accident response system that instantly identifies the situation and establishes and implements emergency measures when it occurs.
- We manage workplace accidents by dividing them into Levels 1 and 2, depending on the scale, while the status of all Level 1 and 2 accidents, investigation results, and measures to prevent a recurrence are reported to the CEO.

Accident Response Steps



Classification of Accident Types

Classification	Personal Injury	Physical Accident	Environmental Accident	Guard/Security Accident
Level 0	Near miss	Near miss	Near miss	Near miss
Level 1	① Medical Treatment (MTC) ② Outpatient treatment for 3 or less days ③ Hospitalization for observation purposes	⓪ Fire, explosion, leak, or collision causing property damage less than KRW 10 million	Personal injury or physical damage corresponding to Level 1 resulting from leakage of pollutants stipulated in environmental laws	Asset loss of less than KRW 10 million resulting from inadequate guarding/ security
Level 2	① Outpatient treatment for 4 or more days ② Loss of one or more workdays ③ Hospitalization of employees or supplier employees for treatment purposes ④ Serious disaster ⑤ Serious industrial/civil disaster	⓪ Fire, explosion, leak, or collision causing property damage of KRW 10 million or more	Physical injury or physical damage corresponding to Level 2 resulting from leakage of pollutants stipulated in environmental laws or social controversy raised to the extent that reporting to the relevant authorities is required.	Asset loss of KRW 10 million or more resulting from inadequate guarding/ security

Work Site Certification

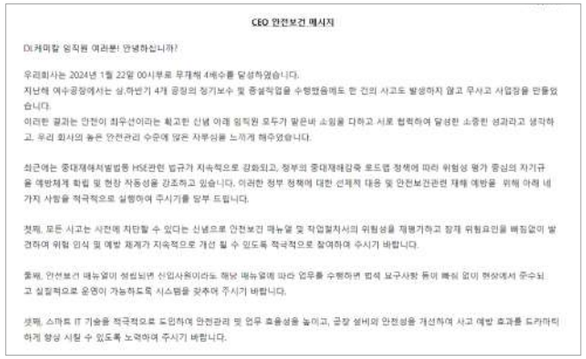
Category	Business area	ISO 9001	ISO 14001	ISO 45001	PSM
HQs	Business	○	○	○	
R&D Center	R&D	○	○	○	
Yeosu Plant	HDPE	○	○	○	○
Yeosu LHDPE Plant	LLDPE	○	○	○	○
Yeosu PB Plant	PB	○	○	○	○
Yeosu C4 Plant	PB, DETB, EPO	○	○	○	○

HEALTH AND SAFETY

Spreading a Safety Culture

CEO Safety Message and Establishing Safety-first Culture

- DL Chemical CEO declares our commitment to safety leadership through CEO Messages.
- To raise safety awareness and establishing a safety culture throughout the company, Quarterly emergency drills, CPR trainings and Safety Talk sessions prior to every meetings and communication of emergency evacuation route are conducted



CEO 안전보건 메시지

DL케미칼 임직원 여러분! 안녕하십니까?

우리회사는 2024년 1월 22일 00시부로 무재해 4배수를 달성하였습니다.
지난해 여수공장에서는 상.하반기 4개 공정의 정기보수 및 증설작업을 수행했음에도 한 건의 사고도 발생하지 않고 무사고 사업장을 만들었습니다.
이러한 결과는 안전이 최우선이라는 확고한 신념 아래 임직원 모두가 맡은바 소임을 다하고 서로 협력하여 달성한 소중한 성과라고 생각하고, 우리 회사의 높은 안전관리 수준에 많은 자부심을 느끼게 해주었습니다.

최근에는 중대재해처벌법등 HSE관련 법규가 지속적으로 강화되고, 정부의 중대재해감축 로드맵 정책에 따라 위험성 평가 중심의 자기규율 예방체계 확립 및 현장 자율성을 강조하고 있습니다. 이러한 정부 정책에 대한 선제적 대응 및 안전보건관련 재해 예방을 위해 아래 네 가지 사항을 적극적으로 실행하여 주시기를 당부 드립니다.

첫째, 모든 사고는 사전에 차단할 수 있다는 신념으로 안전보건 매뉴얼 및 작업절차서의 위험성을 재평가하고 잠재 위험요인을 빠짐없이 발견하여 위험 인식 및 예방 체계가 지속적으로 개선 될 수 있도록 적극적으로 참여하여 주시기 바랍니다.

둘째, 안전보건 매뉴얼이 생산팀뿐 신입사원이라도 해보 매뉴얼에 따라 업무를 수행하면 법적 요구사항 등이 빠짐 없이 현장에서 준수되고 실질적으로 운영이 가능하도록 시스템을 갖추어 주시기 바랍니다.

셋째, 스마트 IT 기술을 적극적으로 도입하여 안전관리 및 업무 효율성을 높이고, 공장 설비의 안전성을 개선하여 사고 예방 효과를 드라마틱하게 향상 시킬 수 있도록 노력하여 주시기 바랍니다.

CEO Safety Message



CPR trainings



Safety Talk



Emergency evacuate route

Health and Safety Risk Management

Risk Assessment

- DL Chemical establishes and implements risk removal and reduction measures for work-related hazardous factors and work environment through risk assessment for processes, works, and hazardous chemicals.
- By involving workers in risk assessment, we collect their opinions in real time and seek solutions. The assessment results are shared with employees and suppliers to enable risk monitoring throughout the supply chain.

Health and Safety Risk management Process

1. Plan
   - Identify HSE risks
2. Do
   - Use adequate risk management techniques
   - Identify risk levels and formulate mitigation measure
3. Follow up on the risk mitigation measure
4. Report the result of risk assessment activities

Health and Safety Risk Management Framework

Category		Regular Assessment			Ad Hoc Assessment		
		Cycle	Target	Method	Cycle	Target	Method
DL Chemical	Process Risk Assessment	Once every 4 years	Production	HAZOP	At all times (such as change management)	All departments	– HAZOP – K-PSR – Checklist
	Work Risk Assessment	Annual	Production, Maintenance	JSA	When drafting a work plan	All departments	JSA
			Supporting organizations	4 M	Formulating and revising operating procedures		
	Chemical Risk Assessment		All organizations	Charm	On the introduction of new material or substitution of existing material		Charm
Suppliers	Risk Assessment (process/work)	Annual	Suppliers	4M, Check List	Not applicable		

HEALTH AND SAFETY

Health and Safety Risk Management

Risk Assessment Detail

Category	Target in Detail	2022		2023		Remarks
		No. of Risk Factors	No. of Improvement Measures Taken	No. of Risk Factors	No. of Improvement Measures Taken	
Yeosu Plant	Production and support departments	110	108	124	115	• Process risk assessment methods: based on HAZOP and K-PSR (ad hoc) • Operational risk assessment methods: JSA* (production, maintenance); 4M (support departments)Process risk assessment for PE1 and PE catalyst production teams: HEMP**, an advanced risk assessment technique
Daejeon R&D Center	All departments of the R&D Center	48	27	46	33	• Based on JSA* • The remaining 13 risk factors will be addressed in 2025 when the reaction building is built.
Suppliers	9 suppliers***	55	54	78	78	• Based on 4M and Checklist • Risks were mitigated through the Safety/Process/Technology Teams' coaching and special safety training.

*Job Safety Analysis: A process to analyze the work safety environment and compared with the contents of the safe work procedure/risk assessment document in the presence of workers and safety managers to derive improvements
**HEMP: Hazards and Effects Management Process
***select suppliers that perform frequent and high-risk tasks by sector
※ Among the risk factors, those not included in 'improvement measures' require investment; thus, they are scheduled to be solved during regular maintenance in 2024 or 2027

Risk Assessment and Remediation Processes

Identify Internal & External Environment		Assess Risk and Opportunity	Determine and Verify Compliance Requirements	Remediation Plan	
Environmental Aspect	• Manage environmental accidents. • A systematic educational program on the environment does not exist.	• Prevent accidents by inspecting environment – related issues. • The lack of environmental expertise – Build up the organizational competencies.	Identify statutory and other requirements • Serious Accidents Punishment Act • Occupational Health and Safety Act • Clean Air Conservation Act • Water Environment Conservation Act • Chemical Substances Control Act • OEMS • Act of Registration and Evaluation of Chemical Substances	Remediation planning	• Identify environmental materiality and risks • Identify statutory requirements and compliance obligations • Be prepared and respond to emergencies
Risk Factors	• Manage health and safety accidents. • The risk of occurring serious accidents	• Prevent accidents by inspecting health and safety. • The risk of suspended operation resulting from a serious accident	Monitor revisions to the requirements and obligations Identify change points and take remedial action	Determination of the practical methods	• Integrate into the remediation planning process • Assess the effectiveness

HEALTH AND SAFETY

Health and Safety Risk Management

Health and Safety Activities

Type	Activity	Description	Achievement Rate Against the Plan (Completion rate)
Regular site inspections	HSE Audit	• For a third-party verification and detailed diagnosis of vulnerabilities, the HQs conduct semi-annual audits accompanied by external experts in HSE and firefighting. • In 2023, the audits discovered 328 inadequacies; Continuously checking for corrective action and improvement	100%(100%)
	External chemical audit	• Measurement and inspection of the work environment, including hazardous chemical handling/storage and leak prevention facilities, self-inspection on local exhaust systems; Conducted twice a year by an external specialized agency.	100%(100%)
	Routine safety inspection	• The Safety Environment Team conducts routine safety inspections and diagnoses all work sites and vulnerable zones. • The company's CEO and workers identify and mitigate workplace hazards jointly with supplier CEOs. • The Yeosu Plant sets monthly 'Safety Inspection Day' and performs inspections under the chosen theme (the inspection is replaced by other safety audits, such as TA where appropriated)	100%(100%)
Ad hoc site inspections	Onsite unannounced inspection for TA (Turn Around)	• During the facility expansion and TA period, when accidents are most likely to occur, unannounced inspections are conducted by external experts under the HQs' supervision to identify and mitigate risks in advance (HSE-guided inspection). • 92 HSE issues were discovered during 3 inspections at 4 plants each in 2023.	100%(100%)
Company wide common education	Periodic training	• Education, as classified under the Occupational Health and Safety Act • Classify potential risk factors discovered through process risk assessment; Develop safety rules. • Provide training for employees (supervisors and workers) and employees of internal and external suppliers	100%(100%)
	On-boarding Training		100%(100%)
	Training upon work change		100%(100%)
	Special training		100%(100%)
Site-specific education	CPR at the HQs	• A practice-based training program covering CPR, automatic external defibrillators (AED), and the Heimlich maneuver. One hundred thirty-four employees at the HQs completed the training, and it is scheduled to become a regular training program.	100%(100%)
	Special safety education at the Yeosu Plant	• The Yeosu Plant Manager hosts it during the facility expansion and TA period when accidents are most likely to occur.	100%(100%)
	Capacity-build education for supervisors at the Daejeon R&D Center	• Practical training to bolster professional competencies in environmental responses, conducted at DL E&C Safety Experience Center	100%(100%)
Drills	Emergency drills	• The drill (emergency response training) regularly conducted with the Disaster Response Team, the Crisis Management Team, all other employees, suppliers, and local fire departments to ensure the best responsiveness in emergencies	100%(100%)
Healthcare	Employee healthcare programs	• Includes regular health checkups for employees and post-management programs for those with clinical symptoms • A program in which an occupational health doctor provides individual counseling to employees with a high level of obesity found in general and comprehensive health checkups and supports follow-up management, such as InBody measurement • Influenza vaccination for all employees once a year	100%(100%)
	Musculoskeletal disease prevention program	• An occupational health doctor provides individual counseling to employees performing work that puts a strain on the musculoskeletal system and monitors their health status.	100% coverage
	Occupational health and medical services for employees	• Counseling is provided through an external mental counseling center to employees who have suffered mental trauma after an accident.	100% coverage

* Excluded those who could not attend for an avoidable reason, such as business travel

HUMAN RIGHTS MANAGEMENT

Human Rights Management

- To implement systematic human rights management, we plan to establish a human rights management and promotion system based on a roadmap and joint labor-management cooperation in 2024.
- To minimize and manage human rights risks, we prepare human rights management regulations and guidelines presenting standards for proper behavior and value judgment that employees and suppliers must observe.

Human Rights Impact Assessment

- In order to identify and manage potential human rights risks in business activities in advance, a human rights impact assessment is conducted annually for relevant department personnel and managers.

Human Rights Impact Assessment Process

Human rights management declaration > Human Rights policy-setting and implementation > Inspect and assess actual and potential human rights risks > Prevent and mitigate human rights risks > Human rights management activities reviewed by the BOD > Review and refine human rights policies

Results of the 2023 Human Rights Impact Assessment

- DL Chemical assessed human rights impact and identified the areas for improvement by sector.
- Based on the improvement direction identified, we will set and disclose the human rights policy and roadmap.
- A human rights impact assessment is in progress as of 2024 through an external agency to raise the objectivity of the assessment.

	Item	Aggregated Score	Directions for Improvement
1	Establish a human rights management framework.	84.7	Disclose human rights management outcomes; declare human rights policies.
2	No-discrimination in employment	100.0	
3	Guarantee freedom of association and collective bargaining.	100.0	
4	No forced labor	100.0	
5	No child labor	100.0	
6	Protect employee human rights.	100.0	
7	Assure occupational safety.	100.0	
8	Assure environmental rights.	89.6	Develop training programs to bolster employee environmental competencies.
9	Responsible supply chain management	100.0	
10	Protect resident human rights.	100.0	
11	Protect consumer human rights.	100.0	
	Average	97.7	

Employee Grievance-Handling Process

- DL Chemical operates an employee grievance mechanism to handle unethical behavior or human rights violations, such as workplace bullying, sexual harassment, and discrimination.
- By organically linking the grievance handling manager designated at each business site with the HR team at the HQs, we are strengthening grievance management and upgrading the operation of the grievance handling mechanism.

Grievance-Handling Process

Reporting Center	• The grievance manager receives reports, provides consultation, and hands over the case to the HR Team.
Preliminary Investigation	• Upon taking over the reported case, the HR Team handles the case under relevant regulations within a month under the 'taking immediate action after the incident occurs' direction.
Convening the HR Committee	• The HR Committee is convened based on the damage investigation results.
Personnel appointment (Disciplinary action against violators)	• Disciplinary action, such as personnel appointments and transfers • Victim protection measures, confidentiality, and perpetrator isolation to prevent disadvantage or secondary damage to the whistleblower or victim.
Ex-post education (Disciplinary measures are disclosed on the groupware Continuous monitoring)	• Cases and actions taken are disclosed to all employees through groupware to prevent a recurrence.

HUMAN RIGHTS MANAGEMENT

Building a Human Rights Culture

- DL Chemical is minimizing the occurrence of internal grievances by activating an employee grievance-handling mechanism.
- In addition, we established a policy to prevent discrimination and harassment in the workplace and designated a manager for each department to create an environment in which grievances are reported and handled effectively.
- Reports received are investigated, measures are taken to protect victims and discipline perpetrators, and preventive education is provided.

Internal Grievances by Year

2021	2022	2023
0	1	0

Human Rights Education

- DL Chemical provides all employees with training on the prevention of workplace bullying and sexual harassment, improvement of awareness of the disabled, health and safety, personal information protection, and information security.
- Through human rights education, we prevent violations and raise employees' awareness of human rights protection.
- Human rights issues, human rights management, and various educational programs are available on 'Learning Forêt.'

Human Rights Education

Category	Unit	2021	2022	2023
Prevention of sexual harassment	hour	605	660	808
	%	100	100	100
Improving awareness of people with disabilities	hour	604	681	809
	%	100	100	100
Protection of personal information	hour	604	681	198
	%	100	100	100
Information security*	hour	-	-	809
	%			100

*starting in 2023

Diversity

- DL Chemical pursues fairness without discrimination based on gender, academic background, disability, or region of origin and are creating conditions for it.
- We implement policies to develop employee diversity, such as providing programs for competency development.
- To increase diversity, we are expanding the recruitment of women, people with disabilities, and foreign workers.

Diversity-conscious Employment

Category	Unit	2021	2022	2023
Female workers	Person	114	109	116
Female middle managers*	Person	1	3	3
Female junior managers**	Person	22	24	26
Workers with disabilities	Person	6	4	4
Foreign workers	Person	19	21	21

**Team Lead (Acting Team Lead), Manager, Business Unit Lead, Research Advisor, Advisor (includes short-term contract team leads, but excludes team leader executives)
**Level 1-1st, Level 1-2nd, Level 2

HUMAN RIGHTS MANAGEMENT

Diversity Enhancement Program: Reverse Mentoring

- DL Chemical operates a talent development program that supports functional competencies and personal growth under a talent development roadmap.
- We carry out a value proposition mission to attract Generation Z and help them adapt to the organization.

Reverse Mentoring Program

Month	Theme	Mission
Mar.	Warming up for the communication with MZ Generation	• Understanding reverse mentoring • Mutual understanding's tendencies through the MBTI test • Discussing what the mentee expects and how the mentor will support • Establishing a reverse mentoring plan under the mentor's leadership
Apr.	Sharing values and lifestyles to reduce the generation gap between the MZ and the older generations	• Discussing the generation gap between the MZ and the older generations through a trip to the countryside • Sharing each other's values and understanding differences after conducting a Gallup Korea Survey • Discussing the ideal leadership model considered by the MZ generation • Introduction to the lifestyle of the MZ generation, including the way they use new mobile phones
May	Understanding the MZ generation's way of playing	• Discussing restaurant preferences between each generation by visiting restaurants recommended by mentees and comparing them with restaurants frequently visited by mentors • (MZ Generation's pastime) Building friendship by playing Escape Room the Game and board games together • Increasing cultural understanding between the MZ and the older generation
Jun.	Health and well-being of the MZ and older generations	• (MZ generation's way of living) Sharing healthcare after experiencing a one-day class (yoga, cooking, etc.) on wellness and health, the MZ and older generations consider
Jul.	Sharing the MZ generation's self-development methods	• Sharing thoughts and values about self-development (foreign language, OA, career development, financial planning) between the MZ and the older generations • Among the self-development methods of the MZ generation, the mentor selects one to experience it with the mentee, and both design a self-development roadmap after reverse mentoring.
Aug.	Sharing thoughts about reverse mentoring programs	• Sharing thoughts by holding a congratulatory party following the end of reverse mentoring • Discussing the future direction of reverse mentoring and what needs to be improved



Reverse Mentoring Programs

ORGANIZATIONAL CULTURE

Talent Development Roadmap

- DL Chemical operates a refined education system by position to cultivate 'functional experts with global competitiveness.'
- In addition to in-house training, we provide external training opportunities and operate self-development modules to encourage employee participation.

Category	Onboarding Course Modules		
Executives	Orientation; Understanding the Business [2 days]		
New Hires	HQs	R&D Center	Plant
	Common Onboarding Course [2 wks]		
	FC Mentoring [10 wks]		Joining the plant [10 wks] → (End of probation period) → Joining the department [4 wks] → OJT/FC mentoring [Production] OJT/FC mentoring [Maintenance]
Experienced	Common Onboarding Course [2 days]		FC mentoring [10 wks]
			Co-Mentoring for experienced hires [annual]

Full Training Course Modules	
Courses hosted by the Company	Common
	Leader [Leadership]
	Master [Core/Professional]
	Global [Global Mindset]
Division/work site Courses	Job Skills
	Onsite education at HQs and work sites
Self-development	Learning Foret [online]
	Providing job-specific external training and domestic and international seminars for career development

Self-directed Development

STEP 1

Individual FC competency diagnosis
- Writing down the core unit tasks of the current job
- Analysis of job knowledge and skills that require competency development

STEP 2

Self-development planning
- Search for required courses within the training support module
- Establishing personalized growth and development plan according to position/job

STEP 3

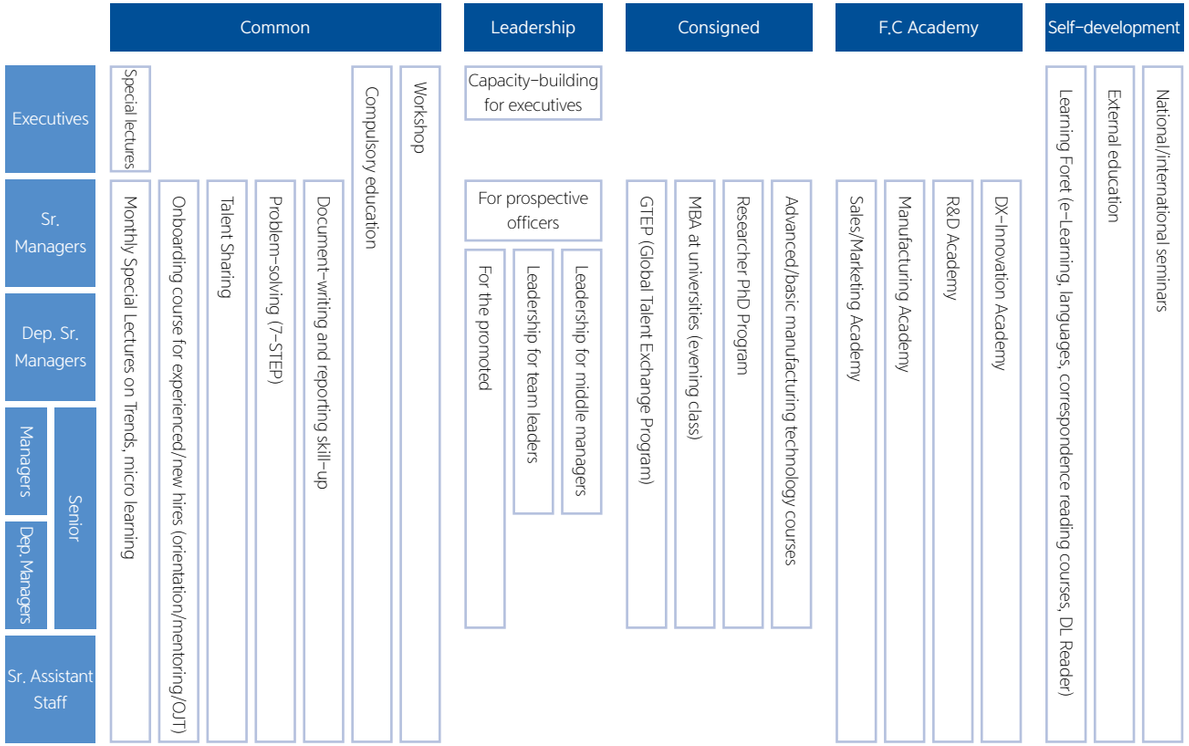
Implementation of the development plan
- Guaranteed training schedule and time through coordination of work within the team
- Growth goal management

ORGANIZATIONAL CULTURE

Framework for Developing Functional Experts with Global Competitiveness

- DL Chemical operates a refined education system by position to cultivate 'functional experts with global competitiveness.'
- To expand synergy between KRATON, a subsidiary located in the US, and the HQs, we are bolstering employees' functional competencies (FC) by operating the 'GTEP (Global Talent Exchange Program).'
- Upon introducing the FC Academy, we are developing FC courses to strengthen expertise in sales/DX/innovation, starting with R&D and manufacturing.

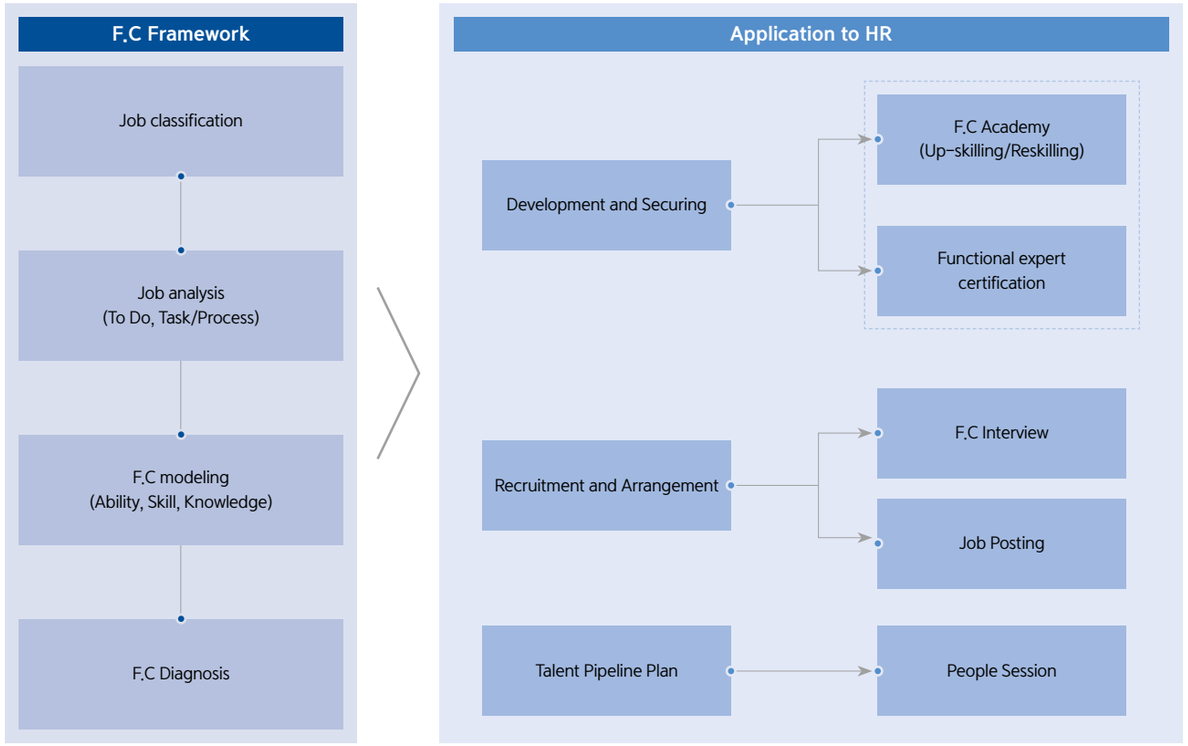
Talent Development Framework



Introducing a F.C (Functional Competency) Framework

- DL Chemical established the F.C Framework, which consists of functional competency diagnosis and competency modeling, to secure functional expertise and develop careers for our employees.
- We apply this framework to HR affairs to change the HR paradigm centered on functional expertise.

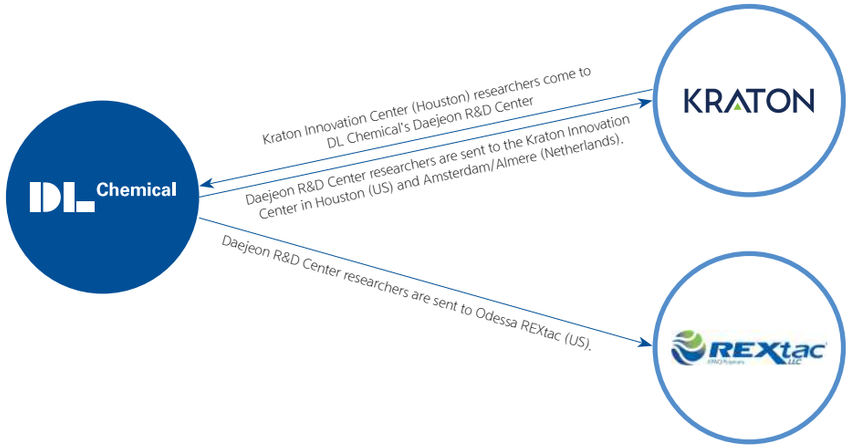
F.C Framework and Plan to Expand Utilization



ORGANIZATIONAL CULTURE

GTEP (Global Talent Exchange Program)

- DL Chemical operates GTEP, a human resources exchange program, to create PJT synergy between overseas affiliates/subsidiaries, develop global talent, achieve our global vision, and fully implement our strategies.
- Through GTEP, we are improving individual capabilities and internalizing core technologies and best practices based on the experiences of overseas affiliates/subsidiaries.





Activities under GTEP

Monthly Special Lectures on Trends

- DL Chemical hosts Monthly Special Lectures on Trends by inviting experts in various fields, such as responding to environmental changes, innovation in working methods, understanding new technologies, and humanities/society/psychology.
- These special lectures provide business insights by informing about changes in the external environment and new technology trends.
- Additionally, they cultivate leadership insight through convergent understanding between various fields and enhancement of knowledge in humanities.

Monthly Special Lectures on Trends

Mo.	Theme
Jan.	Domestic and international economic outlook and corporate response for 2024
Feb.	The way an innovative organization works
Mar.	The Present of Korea's SMR Technology and Future Business Opportunities
Apr.	Life and its beauty
May	Global quantitative tightening situation and international financial issues
Jun.	IT technology changes and opportunities for manufacturing innovation
Jul.	Analects of Confucius, Finding the Path for Human
Aug.	Population shocks and future opportunities
Sep.	Beta Strategy (to succeed in second place rather than first)
Oct.	The World of quantum – technology that Will Change the World
Nov.	Wisdom of the heart
Dec.	Trends in Korea 2025

ORGANIZATIONAL CULTURE

Organizational Culture Improvement Framework

- Every year, to increase employees' satisfaction with organizational culture, we diagnose the level of change in employees' awareness of engagement and creation of an enabling environment and then establish improvement directions.

Organizational Culture Improvement Process

Organizational Culture Survey	FGI by Position	Survey Result Analysis	Identification of Improvement Tasks	Sharing and Implementing Improvement Tasks
• Conduct an organizational culture survey targeting all employees and share the results.	• Verify the survey results through FGI (Focus Group Interview) by position.	• Based on the survey results, conduct a root cause analysis for areas requiring improvement and derive points for improvement.	• Identify new improvement tasks that can create a virtuous cycle through the complex interaction of improvement change points.	• Share improvement implementation plans through company-wide briefing sessions; Intensively implement improvement tasks, monitor, and provide feedback. • Improve the organizational culture through continuous implementation and dissemination of new implementation tasks.

2023 Organizational Culture Survey Results

- Approximately 88% participated (568 out of 646).
- There is an overall upward trend when comparing the average score and positive response rate* for all questions over the past three years.
- Changes in perception of vision, strategy, and leadership increased the positive response rate.

Changes in Average Scores



Changes in Positive Response Rates*

(Unit: %)



*"Response to the question, "The company is changing positively."

Organizational Culture Survey Checklist

- The survey area was largely divided into Engagement and Enablement and consisted of 24 questions in 8 areas.

Survey Area	Driver	Keywords
Engagement	Vision and strategy	Growth and challenging (the company)
		Awareness of changing directions
		Understanding the goals
	Market and customer-centric	Commitment to high quality
		Understanding and meeting customer needs
	Leadership	Performance-focused
		Confidence in leaders
		Management's commitment to support
		Leaders' commitment to support
	Growth and challenging	Motivation
		Outperforming expectations
		Individual challenging
Enablement	Innovation	Process innovation
		Process improvement
		Response to changes
	Learning and education	Competencies that require change
		Providing growth opportunities
		Providing educational opportunities
	Respect, communication, and collaboration	Inter-departmental and divisional collaboration
		Collaboration within a team
		Respect and communication
	Resources and systems	Available workforce
		Efficiency in frameworks and structures
		Empowerment
Others		Proposals

ORGANIZATIONAL CULTURE

7 Improvement Tasks for the Organizational Culture

- DL Chemical classifies items that require improvement in organizational culture and identify points for improvement after analyzing root causes.
- We devised 7 improvement tasks so that the resulting improvements can create a virtuous cycle.

Improvement Tasks	Purpose
Pursue the 'Why DLC' campaign	Improve work quality at the company level by changing work habits and work instruction/listening methods based on "Why" thinking.
Achieve process efficiency through a 'Work Diet'	Eliminate unnecessary or customary waste work derived through FGI in connection with "Why change" during the 'Why DLC' campaign.
Boost teamwork through 'TWIM'	Improve overall teamwork through customized prescriptions based on 'TWIM' diagnosis results.
Improve communication between plants, departments, and position holders	Create an effective collaboration environment by operating communication and networking programs that consider the situations and needs of each work site, department, and position holder.
Create a culture of praise and gratitude	Create a culture that expresses gratitude and communicates with members who practice core values or provide help.
Build an FC-based self-directed 'CDP'	Break away from passive training, provide self-directed training programs and learning environments, and provide preferential opportunities and rewards to members who have improved their capabilities.
Provide integrated educational guides and ground rules	Providing integrated guides for the various educational resources provided by the company will support employees' self-directed learning and self-development and improve convenience satisfaction.



Case study: Creating a culture of praise and gratitude

Purpose

To create a culture where members express gratitude and praise to peers who practice core values (customers, innovation, passion, persistence, collaboration) or provide help and communicate flexibly

Operation (plan)

Expand the existing 'Thank You Heart' of 'KnoWhere' and operate the 'Live Thank You On' program (once a month) to deliver gratitude and praise to peers who helped improve the system, enabling the delivery of compliments.

Thank You Heart

1. Enter a 'Thank You Heart' to the colleague who helped you or the employee you wish to praise.
   - Search for the name through the 'KnoWhere & Thank You Heart' search box at the top of the groupware
   - Click Thank You Heart and enter what you are grateful for according to
     * AAT principles in the pop-up window.
     * Act (the act you are grateful for), Action (target colleague's ability, effort), Thank (express gratitude)
   - All employees can enter a name in Thank You Heart regardless of whether they are within or between teams, but only one person can be entered a day.
2. Welfare points are paid once a month according to the number of Thank You Hearts.



Live Thank You On

1. 'Live Thank You On' opens on the last Friday of every month from 11 am to 5 pm.
   - Text messages with accessible links are sent to all employees.
   - After logging in, enter thank-you notes for the colleagues you wish to praise in 'Live Q&A' according to AAT principles
   - Enter only one name; use the real names.
2. Gifticon is provided to employees who receive praise messages.



ORGANIZATIONAL CULTURE

Team-building Program

- DL Chemical operates a team-building program that supports communication and exchange within and between teams to improve mutual understanding and intimacy, strengthen teamwork, and encourage a sense of belonging to the organization.
- Each team operates the program autonomously, and each team freely selects the most appropriate activity among the three areas of 'Discover,' 'Learn', and 'Communicate'according to the 'TBP (Team Building Program)' activity guide to configure the program.
- By rewarding top-performing teams, we revitalize our organization.

TBP Activity Guide

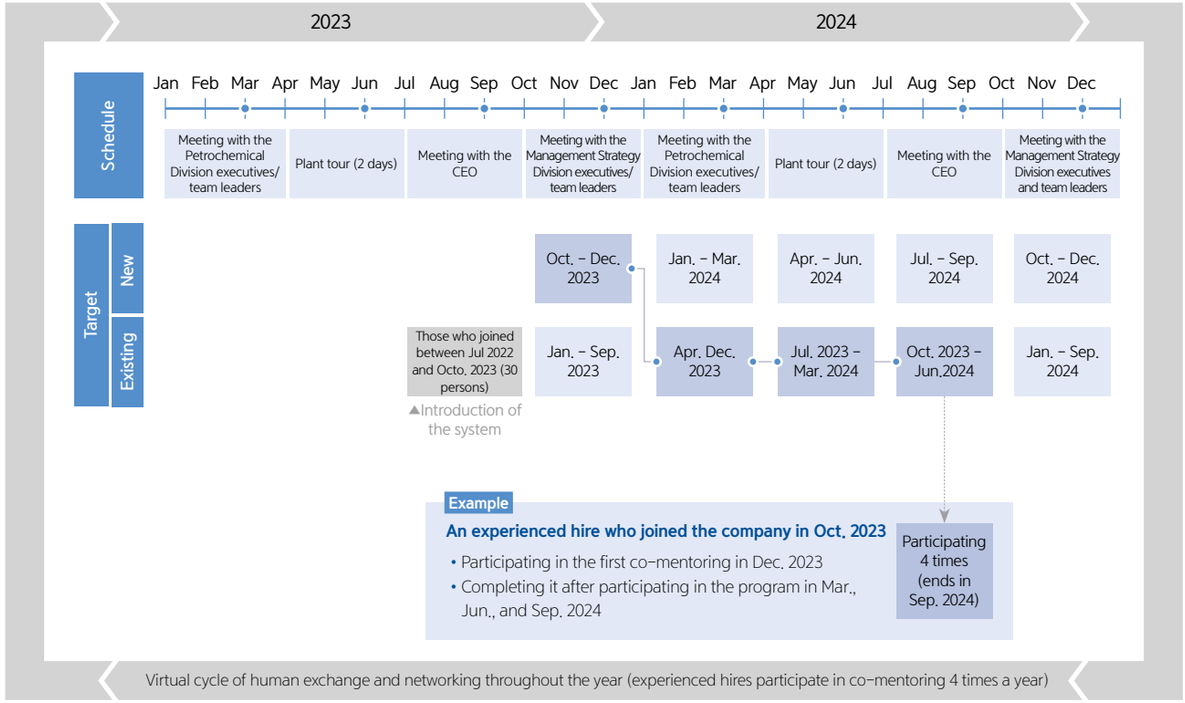
"Shall we DLC? Why not!"

Area	Discover	Learn	Communicate
Concept	Discover something you didn't know before. (propensity, work style, etc.)	Learn something new (through cultural experience and others)	Promoting teamwork through intra- and inter-team communication (through physical contacts)
Content	• Personality type test (MBTI) • Behavioral style test (E-DISC) • Team effectiveness assessment (TEQ) • Berkman diagnosis • Big-5 inspection • The Enneagram test • Establish and share self-development plans (short-term to long-term)	• AI-sseul-shin-job (a TV program on a mysterious dictionary of trivia that is useless to know) – Visit museums and historical sites. • One-day class experience – Leather Craft – Ring making – Tea/drinks/cooking • Volunteer – Handing out free meals – Walking abandoned dogs • Watch a movie/play	• Outdoor activities – Nearby trail/hiking – Cheerful Sports Day – Survival game – ATV experience • Indoor activities – Building a paper tower – Dominoes/Puzzle – Rowing machine – Speed Quiz • Discussion of ways to communicate with each other

Co-mentoring for Experienced Hires

- DL Chemical operates the 'Co-mentoring for experienced hires' program to provide new experienced hires with opportunities for human exchange and to build a natural network within the organization.
- Strengthening employee networks improves understanding of the organization and work processes and enhances a sense of belonging.
- The program is held annually in March, June, September, and December, and experienced hires participate in four mentoring sessions.
- Mentoring activities consist of Meeting with executives/team leaders of the Petrochemical Division and the Management Strategy Division, Meeting with the CEO, and plant tours.

'Co-mentoring for experienced hires' Operational Process



ORGANIZATIONAL CULTURE

Employee Performance Appraisal

- DL Chemical conducts transparent and fair appraisals based on employees' performance and capabilities and operate a remuneration/promotion system accordingly to encourage employees to improve their performance.
- We transparently disclose the remuneration of all members through public disclosure (quarterly, semi-annual business reports).
- Wages are set under the principle of no discrimination based on gender for the same position, and the difference between total and average wage is based on average years of service.

Remuneration System	Description
Individual PI	Provides financial incentives to employees who performed well for two consecutive years
OSI	Immediately rewards employees for their performance
Best Practice	Immediate compensation for best practices every month

Employee Performance Appraisal Conducted

Category	Unit	2021	2022	2023
No. of employees subject to regular performance appraisal	Person	580	595	652
Proportion of employees subject to regular performance appraisal*	%	80.4	83.7	84.8
Proportion of employees subject to MBO**	%	100	100	100

*Calculation Parameters: All employees (including dispatched workers, project-based contract workers, short-term contract workers, etc., who do not undergo regular performance appraisal)
*Although eligible for performance appraisal, the following are excluded from the evaluation for the respective year: mid-year hires, new recruits, and employees on leave/reinstated due to childcare/maternity leave.
**Proportion of employees utilizing goal management: The ratio of the target employees among those subject to regular performance appraisal.

Employee Welfare Benefits

- DL Chemical implements various types of flexible work systems, including telecommuting, to improve employee satisfaction and provide opportunities to increase engagement.
- If overtime work is unavoidable, compensatory leave is granted to ensure sufficient rest.
- We provide welfare benefits at a global level to support employees' stable and active lives.

System	Description
Flexi-time work	Commute times can be adjusted to suit individual schedule
Work-from-home	One can choose a working method that suits one's preferred work style.
Compensatory leave	Compensatory leave is provided for overtime work to provide opportunities for rest and recharge.
Comprehensive health checkup	Regular comprehensive health checkups for employees and their spouses
Group accident insurance	Providing insurance coverage for employee injuries
Family event leave	Granting family event leave and paying condolence/congratulation money
Summer vacation and resort	Granting summer vocation in addition to statutory leave and paying vacation bonuses; operating affiliated resorts
Affiliated condominium	Affiliated condominiums nationwide are available at discounted prices.

Creating a family-friendly working environment

- DL Chemical operates various maternity protection systems, including childcare leave, to support female workers' human rights and work-life balance for all our employees.
- We encourage employees to spend more time with their families by implementing common annual leave once a month.

System	Description
Support for medical expenses	Medical expenses paid for employees' spouses, parents, and children
Support for children school fees	Tuition support for employees' children
Congratulatory money for school entrance	Paid upon school admission, from kindergarten to high school
Congratulatory money for childbirth	Payment upon the birth of an employee's child
Shortened work hours	For pregnant women, employees in childcare period, and employees in need of family care
Pre- and post-natal leave and childcare leave	Under the statutory requirement, before and after childbirth and during the childcare period
Paternity leave	Encouraging spouses to participate in childcare after childbirth

ORGANIZATIONAL CULTURE

Social Contribution

- DL Chemical conducts company-wide ESG activities and volunteer near our work sites to fulfill our corporate social responsibilities.
- At the company level, we conduct a 'plogging and walking' campaign to purify the environment of local communities and reduce carbon emissions.
- We plan and implement social contribution activities at the work site level that reflect each plant's characteristics.
- We work to contribute to establishing a sustainable social contribution culture by forming a volunteer corps that participates in volunteer work and social contribution activities so that employees can become the main agents of social contribution.

Company-wide Activities

Program	Donations	Description	Total Donations	Expected Benefits
Eco Plogging Challenge	KRW 10,000 per participant	• Voluntary participation at least once a month • Picking up trash near work or home	10,800,000	• Clean communities • Sponsorship for the underprivileged
Walk Today Challenge	KRW 500,000 when the monthly goal of '30 million steps by all participants' is achieved	• Monthly voluntary participation	7,102,000	• Reduced emission by using public transportation for commuting • Improved employee health • Sponsorship for the children with disabilities

Work site-level Activities

Category	Program	Description	Description No. of Participants (Expenditure)	Expected Benefits
HQs	Sharing briquettes	• Annual (in Feb.) • Delivery of briquettes to underprivileged people near the HQs	• 28 (KRW 8.5 mil.)	• Support for the underprivileged through community service • Enhanced employee communication
	Housekeeping Diet	• Twice a year (in Oct.) • Donating recyclable items	• Skipped in 2023	• Support for the underprivileged through resource recycling and virtuous cycle • Reduced carbon emissions
R&D Center	Chemistry Classroom	• Once every 6 months • Eco-friendly experiment training for students near the R&D Center	• 52	• Community service • Talent donation
Plants	Facility Repair Volunteer Team	• Quarterly • Repairing houses for underprivileged people	• 651	• Support for the underprivileged through community service • Enhanced employee communication

* Planned and implemented under each plant's responsible department

Social Contribution by Volunteer Group

Volunteer Group	No. of Participants	Major Activities	Remarks
Facility Repair Volunteer Corps (Hansup Volunteer Corps)	– 2021: 764 – 2022: 679 – 2023: 651	– Repair and replace old facilities and equipment – Installation of new amenities – Painting and cleaning facilities	
Donation and scholarship volunteer corps (One Love Corps/Little Heart Corps)	• One Love Corps –2021: 1,087 –2022: 992 –2023: 938 • Little Heart Corps – 2021: 473 – 2022: 537 – 2023: 544	– One Love Corps: After selecting a school in Yeosu city, select students and provide scholarships – Little Heart Corps: Donate quarterly funds to social welfare facilities in Yeosu city.	– One Love Corps: Scholarship worth KRW 2 million per year – Little Heart Corps: Donates approximately KRW 900,000 to Ssangbong Community Welfare Center every quarter

** The Share-Love and the Han Wool volunteer corps are not in operation.

ORGANIZATIONAL CULTURE

Social Contribution

Chemistry Classroom



Donation by Walk Today Corps





Facility Repair Volunteer (Hansup Corps)





Briquett sharing



HQs Eco Plogging







Plants' Eco Plogging





R&D Center Eco Plogging

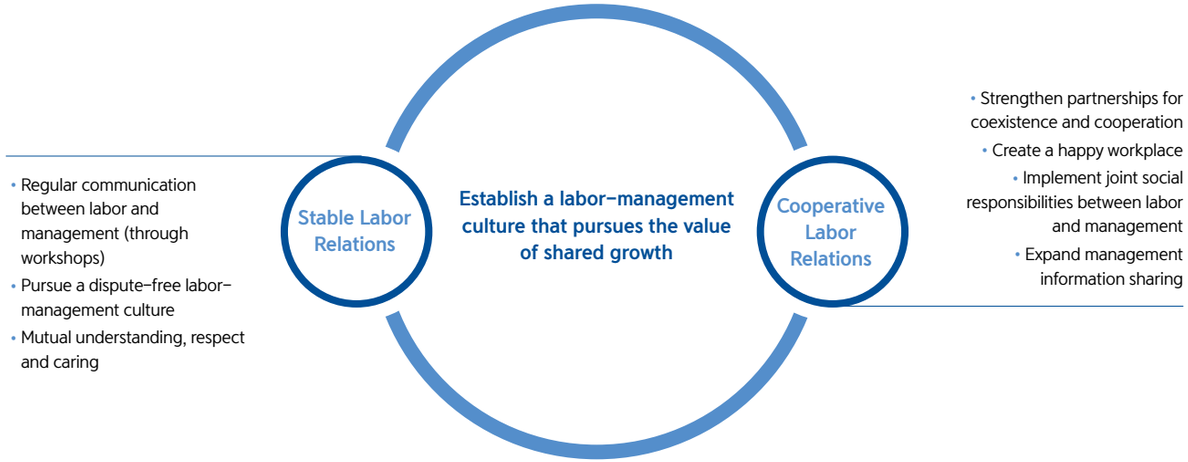




LABOR RELATIONS

Labor-Management Shared-Growth Framework

- DL Chemical promotes stable and cooperative labor relations to realize a labor-management culture of shared growth.
- We improve the stability of labor relations by activating communication between labor and management through workshops and council operations.
- We pursue cooperative labor relations by sharing management information and jointly carrying out social responsibilities.



Labor-Management Relations

- DL Chemical does not impose disadvantages on the basis of union membership or activities, as required by law, and we allow employees to join unions freely.
- We conduct collective bargaining based on mutual understanding, respect, and consideration and uphold the results of collective bargaining (every other year).Through the Labor-Management Council, we listen to workers' difficulties and reflect on their opinions to improve the company's policies (once a quarter).We improve working conditions by conducting wage negotiations (once a year).
- We create a dispute-free labor-management culture by holding events where labor and management participate regularly throughout the year, such as spring hiking, fall sports competitions, and labor-management unity workshops.

Collective Bargaining

Category	Unit	2021	2022	2023
No. of Employees Subject to Collective Bargaining	Person	534	522	568
No. of Union Subscribers	Person	269	288	314
Union Subscription Rate (%)	Person	50	55	55

*Employees subject to collective bargaining: Sr. Managers and under



Spring Sports Competition



Labor-Management Unity Workshop

SHARED GROWTH

Supply Chain Win-Win Strategy

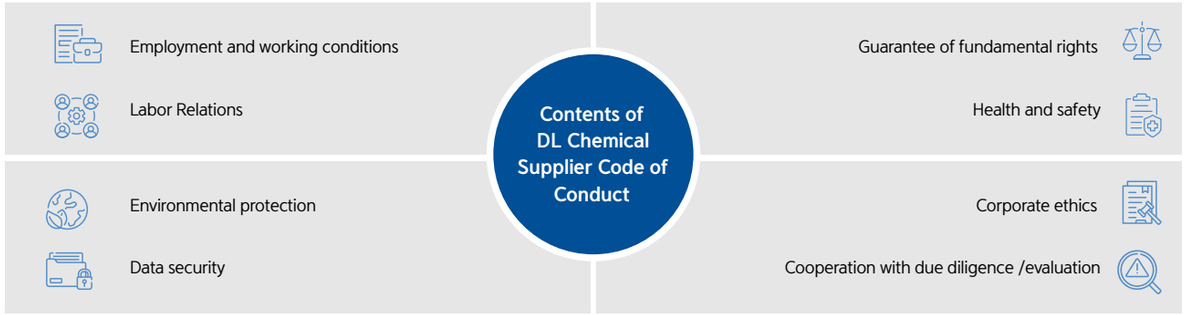
- As part of implementing the goals of ESG strategic initiatives, we pursue a shared growth plan and pursue win-win relationships and sustainable development with suppliers that go beyond compliance with related laws such as the Act on the Promotion of Mutually Beneficial Cooperation Between Large Enterprises and Small and Medium Enterprises and the Fair Transactions in Subcontracting Act.
- DL Chemical builds a sustainable supply chain ecosystem through risk management within the value chain, support suppliers in complying with laws and regulations, and fulfill social responsibilities.
- We are building a mutually win-win transaction culture, operating various communication channels to enable effective communication, and expanding our compliance culture at a global level.
- We plan to strengthen shared growth by creating a shared growth fund and supporting ESG education.

Mutually Beneficial Transaction Culture	Effective Communication	Expanding to a global-level compliance culture	Strengthening Shared Growth
• To maintain fair and transparent corporate management and business relationships, establish/announce/operate supplier codes of conduct and integrity pledges. • Ensure supplier management stability and work quality/safety by preventing low-price bidding. • Provide appropriate compensation for innovative activities and performance. • Share relevant information and perform safety-related activities to strengthen safety capabilities.	• Operate a supplier council: Operate a system for supplier communication (grievances, suggestions, rewards). • Operate a purchase portal (Q&A).	• When evaluating suppliers, reflect ESG factors such as labor and human rights. • Follow the laws.	• Create and support a shared growth fund. • Improve subcontract payment conditions (expedited payments). • Establish a subcontract review committee. • Support ESG education.

Supply Chain Policy

Link to Supplier Code of Conduct Link to Supplier Integrity Pledge

- DL Chemical operates a supply chain policy for shared growth with suppliers in the value chain.
- We strengthen supply chain cooperation and trust through our supplier code of conduct.
- We implement fair trade and a healthy corporate culture through an integrity pledge.
- By supporting suppliers, we are strengthening the win-win supply chain management system, which comprises raw material suppliers, logistics service providers, and service providers.



Supply Chain – Status

- DL Chemical classifies and manage our supply chain according to purchasing characteristics and company size.
- The supply chain comprises about 2,300 suppliers, including goods (raw materials, packaging materials, equipment), construction, and service (logistics, services) providers.

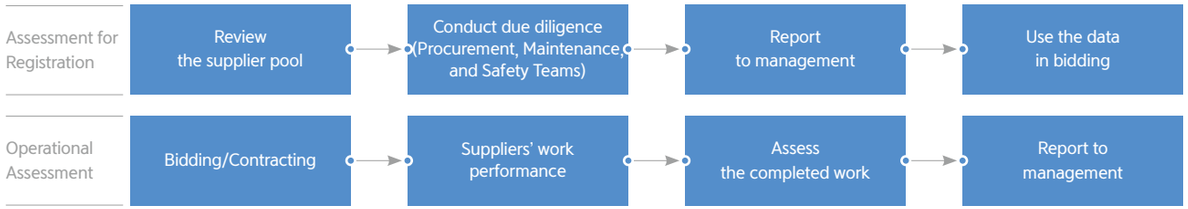


SHARED GROWTH

Supply Chain Competency Assessment

- DL Chemical maintains stable production by minimizing business risks and discover excellent suppliers by operating a competency (for supplier registration and operational assessment) process to enhance the quality and capabilities of suppliers.
- The assessment purpose, period, and items vary depending on the nature of the work. Still, fairness is ensured with objective assessment factors.
- We seek to strengthen our suppliers' capabilities by providing feedback on assessment results.

Competency Assessment Process



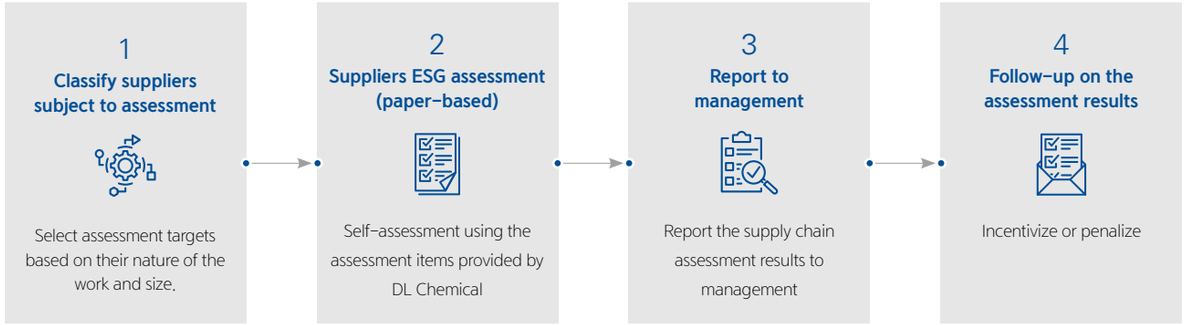
Sector-specific Competency Assessment

Assessment for Registration		Operational Assessment	
Sector	Content	Sector	Content
Procurement	Management status	Maintenance	Construction, quality control
Maintenance	Experience, technology	Safe Environment	Safety and environmental management
Safe Environment	Safety and environmental levels	Responsible Teams	Satisfaction levels

Supply Chain ESG Assessment

- DL Chemical discovers non-financial ESG risks that may arise within the supply chain, including those related to the environment, safety, and human rights, and systematically conduct ESG assessments to mitigate and prevent them.
- ESG assessment is conducted on 26 evaluation indicators related to the environmental and social domains and code of conduct.
- Assessment items are applied differently depending on the supplier's size and the purchasing characteristics of raw/packaging materials, equipment, construction, and services.
- We tightened the health and safety assessment to respond to the Serious Accidents Punishment Act.
- To encourage our suppliers to improve their ESG scores, we require them to obtain a score of 70 or more in each evaluation category and submit a corrective action plan if their score is lower.
- If there is no improvement, we take action, such as suspending the transaction.
- We upgraded the ESG assessment system by expanding information security (governance)-related questions and making overall improvements by reorganizing the category level. (2023)

ESG Assessment Process



SHARED GROWTH

2023 Supply Chain Assessment

- DL Chemical assessed the competencies of 119 suppliers. All achieved good results in the long-term/general/construction fields.
- In the paper-based assessment on ESG consciousness of 32 major suppliers, the average score was 96.1.

Sector-specific Supplier Assessment Result

Assessment Area	Selection Criteria	Assessment Targets	Assessment Results	Whether Improvement Requested
Long-term cooperation	Covers four long-term cooperation areas: packaging and shipping, fixed equipment, rotating equipment, and design	4 suppliers	84.0	None
General cooperation	Contractors supplying labor force, maintenance services, and other services on a unit price basis	80 suppliers	87.8	None
Construction	Suppliers that have performed spot construction more than 4 times a year with a construction amount of KRW 5 million or more	35 suppliers	89.0	None
ESG assessment	Companies that trade over KRW 1 billion per year and follow the annual assessment roadmap	32 suppliers	96.1	None

Supplier ESG Assessment Framework

Main Category	Subcategory	No. of Assessment Questions
Environmental (E)	Environmental management	4
	Chemical management	3
Social (S)	Adequacies in human rights protection/worker treatment	8
	Safety/Health	4
	Suppliers	1
	Social contribution	1
	Information security	2
Governance (G)	Public disclosure	1
	Corporate ethics/Compliance management	2
	Communication with Stakeholders	2

Changes in the No. of ESG Assessment Targets

(Unit: number)



SHARED GROWTH

Operation Plan for Shared Growth Support Programs

- DL Chemical identifies the internal management status corresponding to the assessment items of the shared growth index and establish implementation tasks.
- We plan to establish a shared growth system by establishing a shared growth support program operation plan and providing necessary support for suppliers, including finance, ESG management, productivity improvement, technology protection, and price adjustment.
- We also plan to provide financial support to suppliers by creating a shared growth fund worth KRW 7 billion and contributing KRW 100 million to a win-win cooperation fund.
- In particular, through the Win-Win Cooperation Fund, we will conduct ESG briefing sessions for suppliers, provide welfare points at Shared Growth Mall, award safety-excellent suppliers, provide safety consulting related to the Serious Accidents Punishment Act, support quality and safety certification costs to improve suppliers' welfare benefits and productivity and enhance the safety environment.

Supplier Safety/Health Audit and Coaching

- To strengthen our suppliers' safety management capabilities, we support health and safety-related job competency-building training and conduct operational audits (once every half-year).
- Suppliers with high service frequency and risks, such as packaging and shipping, fixed machinery, thermal insulation/scaffolding, relay equipment, and rotating machinery, are subject to audit.
- Improvements are requested based on the audit results, and coaching and training on work processes are provided when necessary.

Changes in the No. of Suppliers Eligible for Safety/Health Audits and Coaching (Unit: number)



Support for Risk Assessment

- DL Chemical supports risk assessments (once a year) to build a safe working environment for our suppliers.
- Support is offered to about 10 suppliers performing major tasks, such as logistics and construction, considering service frequency and risk.

Changes in the No. of Suppliers Eligible for Risk Assessment Support (Unit: number)



Financial Support

- DL Chemical provides financial support to prevent suppliers' poor management.
- We subsidized interest on win-win loans worth KRW 7 billion to more than 8 suppliers. (2024)

Support for Suppliers' Management Stability

- DL Chemical encourages long-term contracts of up to 8 years or indefinite terms in the fields of long-term cooperation and general cooperation, respectively, and improve the management stability of our suppliers by adjusting the contract prices of unit price contracts every year.
- We operate a price adjustment scheme to minimize our suppliers' risk of raw material price fluctuations.
- We provide practical support to our suppliers by paying 100% of the transaction price in cash within 15 days. (twice a month)

Category	Unit	2021	2022	2023
Purchasing price	KRW 100 mil.	2,073	2,701	3,000
Joint development of new products (no. of suppliers)	case	5	5	5
Joint development of new products (purchasing price)	KRW 100 mil.	142	158	130

SHARED GROWTH

HSE Meeting with Shared Growth Representatives

- To realize an accident-free workplace, we select suppliers with a high-frequency, high-risk service working at our work sites to meet with their HSE representatives. (Once a year)Safety-related work cooperation is discussed with representatives of approximately 15 packaging, shipping, and major construction service providers.
- We prevent safety accident risks by listening to suppliers' suggestions, taking improvement measures, and providing training on safety management standards.

Operation of the Maintenance Provider Council

- DL Chemical operates the Maintenance Supplier Council to support our suppliers' technology and strengthen HSE management. (twice a year)
- Among construction/unit-price contractors, we provide technical and safety management support and inspection to those who perform high-frequency, high-risk work to strengthen their technical capabilities and raise awareness of safety management.
- We inform our suppliers of safety management standards and share OEMS procedures and changes in laws and regulations to promote compliance with management standards.
- We are upgrading our responsiveness to emergencies through work environment status inspection and technical support, onsite inspection of equipment management, emergency response in an accident, and emergency contact network inspection.

Safety Meeting with Transporters

- To preemptively respond to safety accident risks that may occur during transportation, we hold safety meetings with PMC logistics companies. (4 times a year)
- We share logistics policy changes and safety-related guidelines and discuss suggestions and improvements.
- Safety observation activities are carried out to prevent transportation accidents by checking the application of the agreed-upon safety-related guidelines.

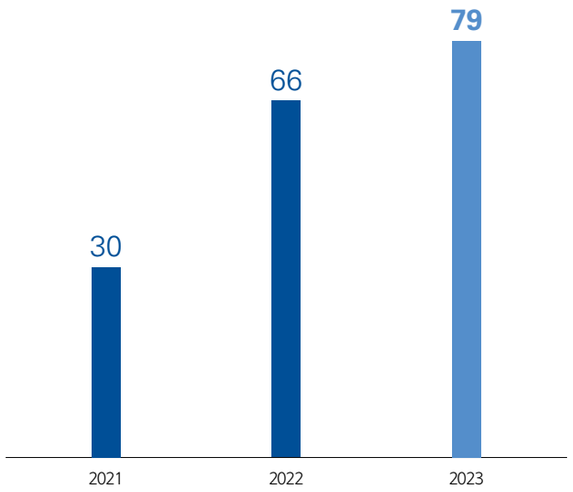
Safety Council with Logistics Suppliers

- DL Chemical holds a safety council with logistics suppliers to prevent safety accidents among our resident suppliers responsible for packaging and shipping and establish an organic cooperation system. (Once a month)
- Our logistics team leader, logistics manager, logistics facility manager, supplier executives, and HSE manager participate in reviewing the safety-related status.
- We share the security required during HSE inspections and discuss near misses and safety-related investment projects.
- Customer complaints and improvement plans are also discussed.
- The agreed agenda is verified at the next meeting to ensure continuous management.

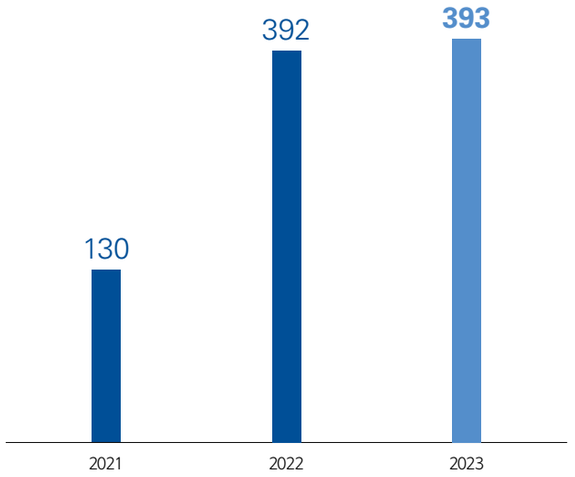
Awards for Suppliers' Improvement Proposal

- DL Chemical collects workplace-related grievances and suggestions from suppliers, review them, and pay rewards. (Once a month)

No. of Improvements Made as Proposed (Unit: number)



Changes in Rewards (Unit: number)



WHAT WE HAVE DONE FOR ESG

CHANGE FOR PROSPERITY

DL Chemical strengthens sustainable value creation both internally and externally by managing governance based on systematic organizational management and internal controls.
With a healthy and transparent corporate culture centered around the board of directors, the company ensures a stable and ethical business environment through comprehensive risk management systems, Jeong-Do Management in terms of compliance, and robust Information Security.

61 Board of Directors (BOD)
64 Risk Management
65 Business Ethics and Compliance Management
71 Information Security

BOARD OF DIRECTORS (BOD)

BOD Composition

Key Performance in BOD Operation in 2023

No. of meetings held

9

No. of agenda items discussed

22

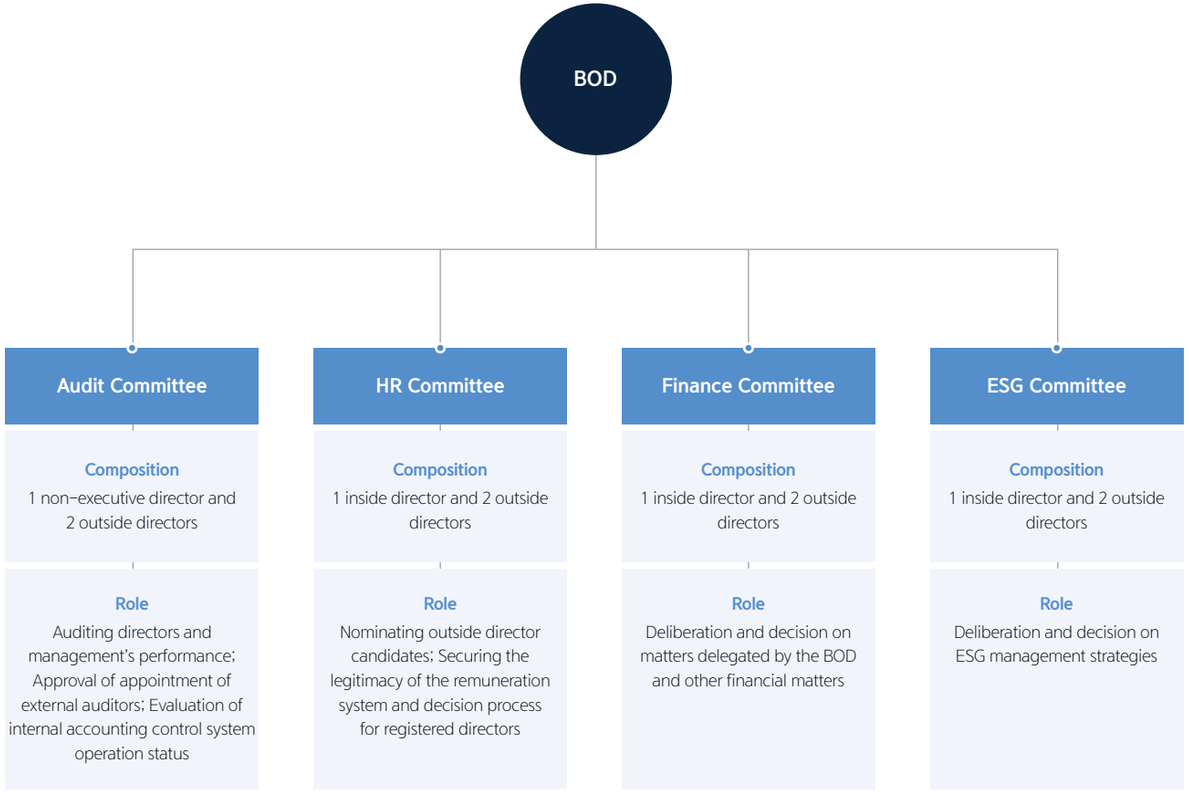
Outside directors' attendance rate

100%

BOD Members

Name	Kim, Jong Hyun Inside Director	Nam, Yong Inside Director	Kim, Kil Su Inside Director	Chung, Jae Ho Non-executive Director	Kim, Eui Chang Outside Director	Lee, In Su Outside Director
Position (whether executive)	Vice-chair (executive)	Adviser (executive)	President (executive)	Managing Director (non-standing)	Director (non-standing)	Director (non-standing)
Gender	Male	Male	Male	Male	Male	Male
Term (year)	3	3	3	3	3	3
Term End Date	Mar. 31, 2025	Mar. 21, 2024	Feb. 10, 2025	Mar. 23, 2024	Mar. 23, 2024	Mar. 23, 2024
Attendance Rate 2023	100%	100%	100%	100%	100%	100%
Relationship to the largest shareholder	Registered director of the largest shareholder (CEO)	Director of an affiliate	Director of an affiliate	Unregistered director of the largest shareholder	N/A	N/A
Fields of activity	CEO, General Management, HR Committee member, ESG Committee member	BOD Chair, Management Adviser	Finance Committee member	Audit Committee member	ESG Committee Chair, HR Committee Chair, Audit Committee member, Finance Committee member	ESG Committee member, Finance Committee Chair, Audit Committee Chair, HR Committee
Whether reappointed	New	New	New	New	New	New

BOD Structure



BOARD OF DIRECTORS (BOD)

Board Independence

- DL Chemical elects our directors at annual meeting of shareholders, and the nominees for director to be elected at the annual meeting are selected by the BOD and confirmed by a resolution submitted to the annual meeting of shareholders.
- We submit shareholder proposals, if any, regarding the election of directors to the BOD and, to the extent lawful, to the shareholders' meeting.
- For outside directors, we have established a HR Committee, two-thirds of which are independent directors, to select candidates and submit proposals to the shareholders' meeting.

Appointment Process of the new outside directors



BOD Expertise

- We enhance BOD's understanding of the company's business and downstream industries through continuous business status updates and visits to plants and the R&D Center.
- We are bolstering the capabilities and expertise required to perform BOD duties through lectures on the current status and outlook of global energy and petrochemicals and in-house training on ESG strategies.

Education for Outside Directors

Date	Attendance	Content
Mar. 30, 2023	100%	Development of applications for existing products and research and development of new products

BOD Performance Appraisal and Remuneration

- The Inside director's remuneration is determined transparently and fairly through the HR Committee, a BOD's subcommittee. The outside director's remuneration is approved at the AGM.
- Under the executive remuneration regulations, the annual salary is paid in monthly installments. Performance incentives are paid by comprehensively evaluating management performance, such as operating profit target achievement, operating profit growth rate, economic added value, and strategic initiatives achievement.

Director Remuneration

(Unit: KRW)

Category	Number	Total Remuneration	Average per person	Remarks
Registered directors	3	2,005,000,000	668,000,000	Excluding outside directors and the Audit Committee members
Outside directors	-	-	-	Excluding the Audit Committee members
Audit Committee members	3	120,000,000	40,000,000	-
Auditors	-	-	-	-

BOARD OF DIRECTORS (BOD)

BOD Operation

Meeting	Date	Agenda Items	Whether approved	Attendance Rate
1st	2023.02.01	No.1: Approval of the 2023 management plan No.2: Approval of the 2022 (2nd term) financial statements No.3: Approval of the 2022 (2nd term) business report	Approved	100%
2nd	2023.02.23	No.1: Conclusion of a SEBS product purchasing contract with Kraton No.2: Conclusion of a cost settlement contract with Kraton No.3: Approval of the AGM convocation and agenda items to be submitted No.4: Approval of the 2023 health and safety plan	Approved	100%
3rd	2023.03.30	No.1: Approval of the large-scale internal trading for the 2Q2023	Approved	100%
4th	2023.04.27	No.1: Conclusion of three contracts, including a shared service contract, with Cariflex	Approved	100%
5th	2023.06.29	No.1: Approval of trading the large-scale goods/services with affiliates for the 3Q2023 No.2: Payment guarantee for Cariflex's line of credit No.3: Conclusion of a guarantee fee agreement with Cariflex	Approved	100%
6th	2023.07.24	No.1: Re-approval of the 2021 (1st term) financial statements No.2: Re-approval of the 2022 (2nd term) financial statements	Approved	100%
7th	2023.09.19	No.1: Approval of trading the large-scale goods/services with affiliates for the 4Q2023	Approved	100%
8th	2023.10.23	No.1: Approval of trading with major shareholders No.2: Approval of establishing a holding company concerning Kraton's division of its BTT business No.3: Approval of investment in the holding company, which is to be established concerning Kraton's division of its BTT business No.4: Payment guarantee for Kraton's fundraising No.5: Conclusion of a guarantee fee agreement with Kraton	Approved	100%
9th	2023.12.19	No.1: Approval of trading the large-scale goods/services with affiliates for 2024 No.2: Approval of transactions between directors, etc. and company (approval of the total amount of the limits)	Approved	100%

Independence of the Audit Committee

- DL Chemical appoints audit committee members at the general meeting of shareholders according to relevant laws and regulations, and more than two-thirds of its members are outside directors.
- The Audit Committee audits the performance of directors' duties, supervises financial reporting, selects external auditors, and performs duties prescribed by laws and articles of incorporation
- The Audit Committee members include one accounting specialist and one legal expert.
- The internal audit department is operated as a support organization to ensure the efficient operation and role performance of the audit committee.

Audit Committee Operation

No. of meetings held	No. of agendas approved	No. of agendas reported
7	6	14

Education Provided for the Audit Committee

Date of training	Audit Committee Members as Participants	Main Lessons
2023.05.12	All members	Trends and implications of changes in corporate governance systems
2023.11.10	All members	The role of the audit committee in overseeing accounting fraud

RISK MANAGEMENT

Risk Management Governance

- DL Chemical is preparing for business variability by securing outstanding business competitiveness, based on verticalized production system as well as diversified business portfolios including Kraton and Cariflex.
- Despite difficult business environment for petro-chemical industry, the company is achieving continuous profitability as well as major financial indicators
- We operate the risk management system to enable the pre-emptive handling of potential risk factors in ever-changing business environment and global economic trend, ultimately pursue sustainable growth

Category	Governance	Activities
Investment	• RMC	• Reviews the feasibility of investment projects and follow-up management plans. • Holds working-level meetings on investment risks and examines the checklist.
Ethics & Compliance	• Audit Committee • Compliance Committee	• Supervises ethical management activities • Operates fair trade practice program • Conducts internal audits according to ISO 37301 (Compliance management system)
Environmental	• ESG Committee • HSE Committee*	• Measures Scope 3 GHG emissions • Performs LCA on all products
Health & Safety	• HSE Committee* • Occupational Health and Safety Committee	• Assesses process/operation risk • Conducts emergency response training • Provides health and safety education • Assesses compliance with health and safety laws and regulations
Supply Chain	• ESG Committee • HSE Committee*	• Assesses suppliers' ESG • Supports suppliers' risk assessment
Information Security	• Information Security Council	• Audits information security • Conducts spam mail simulated drills and inspects vulnerabilities

*HSE: Health, Safety, Environment

Risk-specific Management Framework

- DL Chemical operates advanced risk management system as well as dedicated teams by risk factors with aims to identify not only business-as-usual management risks but also financial & investment-related risks and pre-emptively address potential risks and crises.

Financial Risk Management

Responsible organization: Financial Planning Team

- Although the company's financial burden has increased following the recent increase in borrowings for corporate acquisitions, the Team is proactively controlling financial risks by sufficient liquidity and cash flow focused management.
- The Team continuously monitors the company's financial risks, such as credit lines exposures by diversifying funding sources, securing competitive interest rates, and continuously managing dept portfolios.

Legal Risk Management

Responsible organization: Legal Team

- This team reviews legal risks before or at the time of promoting a large investment-required project and provides review opinions to the project department.
- It also provides legal advice on risks that may arise throughout company management, including plant operation, procurement, human resources, finance, and accounting.

Investment Risk Management

Responsible organization: Financial Planning Team

- Supports the Risk Management Committee members' decision-making by systematically assessing potential risk factors with pre-committee meetings and checklists

Responsible organization: Risk Management Committee

- Operates the Risk Management Committee (RMC) composed of CEO and major executive directors to deliberate on the investment projects' strategic adequacy, profitability, risks, and follow-up measures

Health and Safety Risk Management

Responsible organization: Health and Safety Team

- The Team reviews and systematically analyzes relevant laws and regulations and applies them to the workplace to respond to various safety risks that may arise at the workplace.
- To assure the worker safety and derive the best business effects from safe workplaces, the Team introduces systems, provides safety training, and continuously discovers ways to advance safety management.

Responsible organization: HSE Committee

- Quarterly operation of the HSE Committee composed of top management

BUSINESS ETHICS AND COMPLIANCE MANAGEMENT

Business Ethics

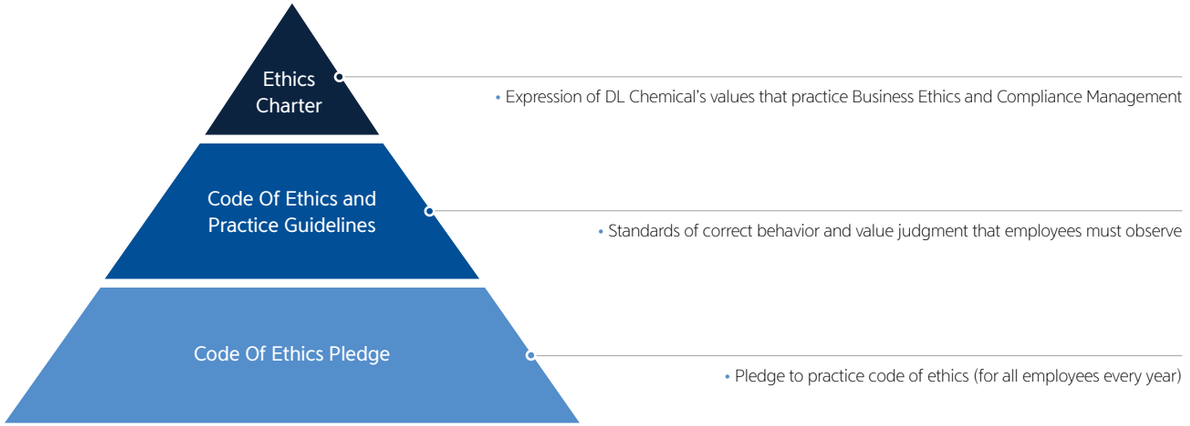
- Based on Business Ethics management, rooted in DL Chemical's founding philosophy of 'honesty and trust,' we are implementing a sustainable management framework by practicing Open Management, Fair Trade Compliance, Business Ethics, and Social Responsibility.

Open Management	Fair Trade Compliance	Business Ethics	Social Responsibility
Active communication fostering a creative and transparent culture	Transparent and ethical management through compliance with relevant business-related laws and regulations	Adherence to our Code of Conduct and compliance with relevant laws and regulations	Social contribution activities, empowered by the profit generated leveraging our competitiveness.

Business Ethics Management Framework

- DL Chemicial has revised the code of ethics to reflect international norms and social requirements and pursue individual employees' internalization of ethical management since the first promulgation in 2000
- The CEO's commitment to Business Ethics management was proclaimed in 2022 internally and externally, and systematic Business Ethics management activities are promoted under the supervision of the Audit Committee, which is composed of outside directors
- The company conducts periodic assessment on the organization(biannually) and suppliers to manage ethical & financial risks
- In 2023, the company has conducted internal audit on sites in and out of Korea (DL Chemical HQs, DL FnC, and E-Pyeonhansesang) to identify possible risks and management system, as a result of which implemented a series of improvement initiatives on the system and process

Ethics Regulations View DL Chemical's Ethics Charter, code of ethics, and ethics pledge



Anti-corruption and Anti-bribery Policy

- DL Chemical disclose our Business Ethics management and compliance policies on the company website and emphasize compliance with Business Ethics and Compliance Management through employee Business Ethics Management Education and pledges to practice ethical management.
- To strictly comply with domestic and international anti-corruption laws, we prohibit requesting or receiving any form of money, entertainment, or convenience from stakeholders.

BUSINESS ETHICS AND COMPLIANCE MANAGEMENT

Business Ethics Management Education

- DL Chemical operates Business Ethics Management educational programs to raise employees' awareness of compliance.
- We train existing employees on major ethical issues, including ethics regulations, major contents, and cases of violations. (once a year or more)
- Business Ethics Management educational is provided to new hires.

Participation in Ethical Management Education in 2023

Category	Unit	Completion			Total
		Real-time Education	Online Education	No. of Persons who Completed the Session	
No. of Persons	Person	189	362	551	**719**
Rate	%	26	50	76	**100**

Business Ethics Management Pledge

- All employees signed the code of ethics pledge, which includes the pledge that they understand the company's code of ethics, Practice Guidelines, Fair Trade CP Practice Guidelines, and compliance management policy and participate in ethics and compliance management and comply with the relevant regulations in 2023.
- By signing the pledge, employees recognize that they have become practitioners of ethical and compliance management, thereby contributing to the formation of a global-level Jeong-Do management culture.
- Overseas organizations (Ho Chi Minh office, Singapore branch) submit their pledge in English.

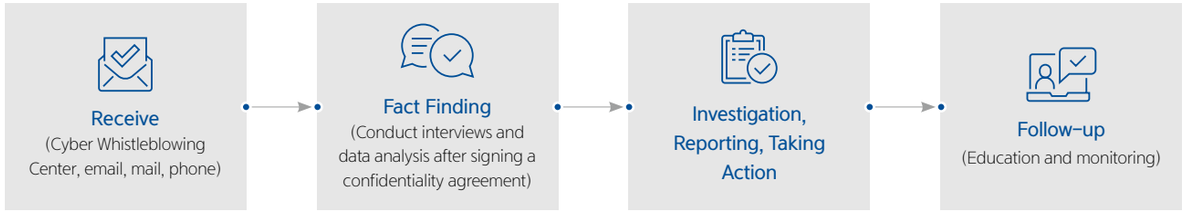
Employees who signed the pledge

Year	Classification	No. of Persons	Signed	
			No. of Persons	Rate
2023	General	395	392	99
	Production (technicians)	324	265	82
	Total	719	657	91

Whistleblowing Channel Operation

- Stakeholders can report internal and external unethical behavior through Cyber Whistleblowing Center, ethical management personnel hotline (phone, email), mail
- Reporting channels are also provided to internal and external stakeholders through regular Business Ethics Management Education and self-correction activities during holidays.
- DL Chemical operates Cyber Whistleblowing Center, integrated with our subsidiaries (CARIFLEX, DL FNC, D-REX), on our website to respond to reports of violations of ethics regulations, such as employee corruption, bribery, and violations of laws and regulations.
- In 2023, three cases of unethical behavior were reported on Cyber Whistleblowing Center and appropriate actions have been taken.

Whistleblowing Process



BUSINESS ETHICS AND COMPLIANCE MANAGEMENT

Compliance Management System Operation

Code of Conduct Compliance Policy

- As we operate, assess, and improve the compliance management system required by global standards, we have acquired and maintained the ISO 37301 certification, an international standard for compliance management system.
- By enacting and announcing compliance policies on the company's management, we are internalizing compliance management, strengthening sustainable management, and improving shareholder and customer satisfaction.
- To establish a responsible operation system, we appoint a compliance management system manager for each team to identify team-specific compliance risks and conduct internal monitoring. (twice a year)
- By helping employees voluntarily comply with the Code of Conduct and Code of Behavior, we prevent regulatory risks that may arise in the business area and protect the company and employees from legal risks.

Compliance Management System Operations

Category	Operational Status
Leadership	• The compliance system-related activities were reported to the ESG Committee (June) • Hosted a Compliance Day event to publicly state its commitment to compliance (October) • All employees pledged to compliance (to practice ethical management) (December)
Internal Competencies	• Conducted regular trainings for internal auditors and relevant personnels (March) • Held workshop to enhance capacity-building for compliance personnels of each team (April) • Operating a dedicated team for compliance
Obligations and Risk Management	• Identified mandatory areas for improvement and implemented risk assessment advancement initiative (April ~ May) • Conducted regular monitoring and voluntary CP audit (June, August) • Conducted internal audit for company-wide mandatory duties and firm adherence to risk management (August ~ November)
Whistleblowing and Investigation	• Operating a whistleblowing channel on website and groupware where stakeholders can report any incidents • Improved the whistleblowing system to enable the reporting to be anonymous as well as write-in • Conducted regular communication on the reporting channel through national holidays to external stakeholders and internal ethical management trainings

Capacity-building Education on Compliance Management Systems

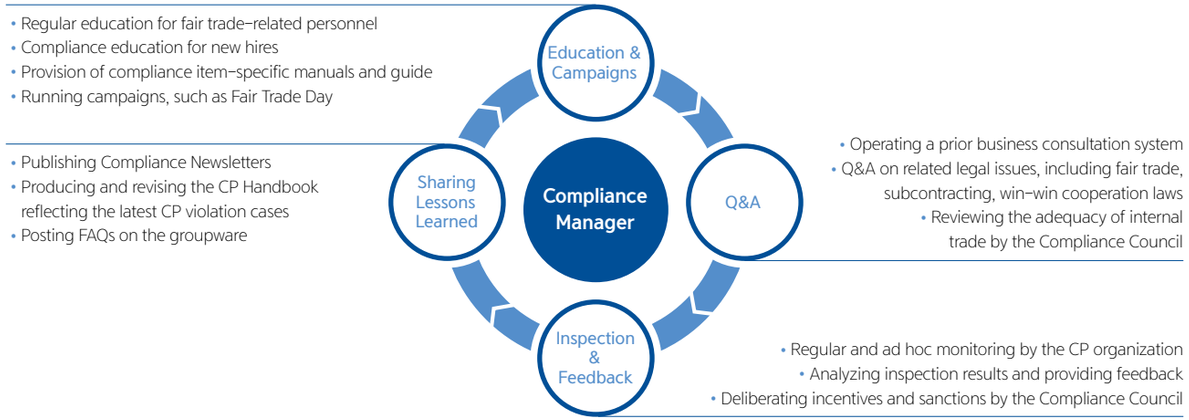
- In 2023, we provided capacity-building education related to the compliance management system to internal auditors and each team's representative 5 times.



BUSINESS ETHICS AND COMPLIANCE MANAGEMENT

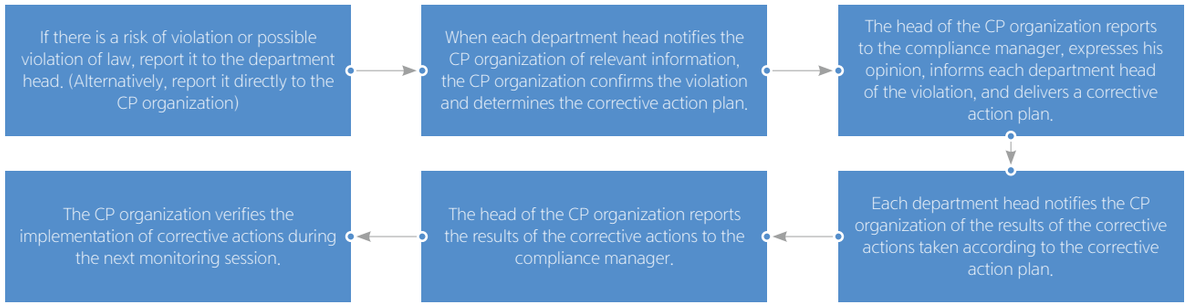
CP Operating Framework

- DL Chemical complies with fair trade principles by sharing knowledge and experience through CP training, inspecting and reporting CP compliance status, and conducting Q&A related to fair trade under the compliance manager's supervision.



Fair Trade Process

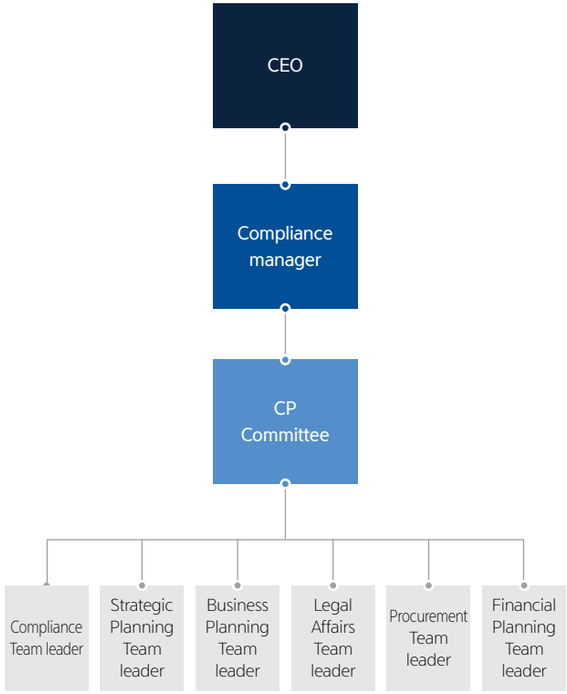
- In case of a violation or potential violation of fair trade law in contracts, sales, and purchases, we follow the following procedures.



Fair Trade Compliance Program (CP) Operating Regulations

- In our CP operating regulations, we specify and manage the CP–related CEO's authorities and responsibilities, roles and duties of a designated CP department and related councils, CP standards and procedures, CP handbook, and CP training.
- The compliance manager checks employees' compliance with CP at least once a half year and reports the inspection results to the CEO or the BOD if necessary.
- The compliance manager also regularly trains employees on fair trade laws and CP operating regulations.
- DL Chemical reviews revisions to CP operating regulations regularly, at least twice a year.

CP Organizations



Revisions to the CP Operating Regulations

Date of Revision	Reasons for and Contents of Revisions
Jan. 2021	• DL Chemical's document forms and tradename were changed. • The Compliance Committee can hold online meetings.
Mar. 2022	• Unified and defined terms • Added the role of the Internal Trade Council to that of the Compliance Council • Added a prior business consultation system • Added CP refresher training • Added a whistleblowing system and informant protection regulations
Mar. 2023	• Changed the regular CP inspection method • Changed the criteria for selecting CP personnel • Clarified sanction deliberation
Jul. 2023	• Added a disadvantage provision for not attending CP training • Clarified personnel to assess CP operational effectiveness
Jan. 2024	• Specified the CEO's roles, authorities, and responsibilities • Specified the compliance manager appointment criteria and added a provision on the announcement of the appointment of the compliance manager • Introduced prior consultation and reporting obligations for employees • Specified CP standards and handbook–related procedures

BUSINESS ETHICS AND COMPLIANCE MANAGEMENT

CP Inspection

- DL Chemical's fair trade unit conducts regular CP inspections to prevent violations of the fair trade and subcontracting laws. (9 teams, approximately 80 people)
- We incentivize outstanding departments based on their CP inspection results.

Inspection Case

A CP inspection was conducted in the second half of the year from November 27 to 30.	• Purpose To prevent internal trade, and subcontracting-related risks	• Target Fair trade-related personnel at the Yeosu Plant and the DT Team	• Content CP inspection meetings and self-inspection using the checklist

Publishing a Customized CP Handbook

- DL Chemical regularly revises the CP handbook twice a year so that all employees can understand changes and standards of behavior.
- We are improving the practicality of the CP handbook by customizing it for high-risk departments (PE Division, PB Division, Procurement Team).

Hosting Compliance Day

- DL Chemical hosted Compliance Day in October 2023 to raise compliance awareness and spread a fair trade/ compliance culture.
- HQs executives and business divisions' fair trade-related personnel (approximately 80) took an oath to comply with fair trade, received the CEO's message, and received CP training. Those with outstanding compliance performance received awards.



CP Handbook

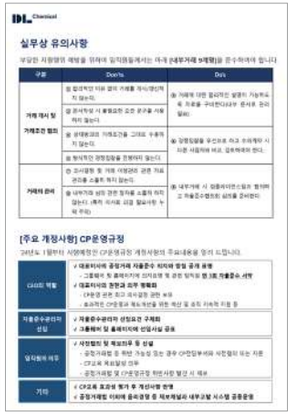


Compliance Day

Publishing Compliance Newsletters

- DL Chemical publish quarterly newsletters presenting major fair trade violations by other companies to prevent unfair assistance and cartels and strengthen awareness of fair trade.





CP Validation

- Starting in 2023, a CP taskforce, composed of 8 CP managers from major affiliates within the DL Group, has been assessing CP operation status and effectiveness once a month.
- The 2023 evaluation results were assessed as fair, and the units with outstanding CP performance received awards at Compliance Day in October.

BUSINESS ETHICS AND COMPLIANCE MANAGEMENT

CP Education

- DL Chemical provides regular CP education in the first and second half of the year and provide 5 CP training sessions to new hires.

2023	No. of Participants	Attendance Rate (%)	Average Satisfaction Level (out of 5)
First Half	60	100	4.0
Second Half	89	100	4.4



CP Education for Experienced Hires



Onboarding CP Education for New Hires

CP Performance and Plan

- DL Chemical provides CP training to related departments and produce customized CP handbooks for each high-risk department to improve understanding of fair trade in the field.
- We internalize a fair trade culture by publishing CP newsletters and conducting the 'Compliance Day' campaign.
- Next year, we will establish and manage a common CP operation direction at the DL group level and enhance CP operation by strengthening the CP work system.

Tax Policy

We know each country's tax laws where we do business, understand their purpose, and faithfully comply with our tax reporting and payment obligations.
By operating transparent tax policies, we strive to play a key role in social and economic development and become a company trusted by various stakeholders.

1. Comply with tax laws

- We understand and strictly comply with the tax laws of the countries in which we do business, and faithfully fulfill our tax obligations, including accurately calculating the amount of tax payable and paying it on time.
- We preserve and manage data and evidence in a documented or equivalent manner.

2. Fulfill tax obligations

- We do not consider transactions that use tax havens for unfair tax avoidance or have no commercial substance.
- We comply with the arm's length principle in third-party transactions or transactions with affiliated persons.

3. Respond to tax risks

- We proactively review and manage tax risks that may arise from business activities.
- We recognize the enactment and revision of tax laws and regulations in a timely manner and actively respond to risks that may arise from them.
- We fulfill our tax cooperation obligations in good faith and communicate fully with tax authorities to build a transparent relationship of mutual trust.

4. Contribute to community development

- By faithfully fulfilling tax obligations, we play a significant role in developing the local community, securing national finance, creating jobs, and revitalizing the local economy.

INFORMATION SECURITY

Information Security Governance

- At DL Chemical, DT Team is organized under the Chief Information Security Officer (CISO) to plan and manage information security work.
- DL Chemical is establishing an organic collaboration system with business departments across the company to efficiently implement information security and support-related systems.
- We proactively respond to security threats in cooperation with information security agencies like the Korea Internet & Security Agency (KISA).
- We signed a consignment contract with Daelim Co., Ltd. to operate and manage the in-house IT security system.

Information Security System

CEO — CISO — DT Team

Division of Information Security Tasks

DL Chemical DT Team	• Revises company-wide information protection regulations, policies, guidelines, and manuals • Manages the information security list and analyzes/takes action on vulnerabilities. • Implements and builds a security system and checks the security of the new system • Provides training and information on Information security

Information Security Regulations

- DL Chemical has information security policies in place to block external threats, prevent internal information leaks, and protect information assets.
- Information security regulations are the top policy that sets the standard for DL Chemical's security and strengthens the company-wide information security system by providing key guidelines corresponding to the regulations.
- Employees can access information security regulations and guidelines through the groupware's company regulations menu.

Privacy Policy

Privacy Policy

- A separate information processing policy is established to protect users' personal information and rights and handle user requests related to personal information.
- The personal information processing policy can be accessed anytime through the company website.
- If the company's privacy policy is revised, it will be notified through the company website.

Information Security Highlights in 2023

- DL Chemical carries out various security activities internally to protect personal information and prevents the leakage of confidential company information.
- We sustain a safe information security system by conducting spam email drills through external entities and checking and supplementing system vulnerabilities.

In-house Security Activities

Activities	Description	Cycle
Information security audit	Inspect work PCs, the work environment, and logs.	Annual
Collecting pledges	Personal information handlers sign the privacy pledge.	As necessary
Security monitoring and inspection	Check security and business system logs.	Always

Security Enhancement Activities through External Entities

Activities	Description	No. of Times
Spam email drills (KISA)	Employee training to respond to the inflow of spam and malicious emails	2
Vulnerability check (SK Shielders)	Check and improve business system vulnerabilities.	1

Information Security Certification

- Our business system is operated by Daelim IDC (Internet Data Center). Every year, Daelim IDC's ISMS (Information Security Management System) maintains a safe Information security system through certification renewal.


정보보호 관리체계
인 증 서
isms

INFORMATION SECURITY

Information Security Education

- DL Chemical provides annual training to strengthen the information protection awareness of employees and stakeholders.
- We provide general information security training to all employees throughout the company to protect the company's business and confidential information.
- Personal information protection training is conducted to departments that handle personal information.

Security Education

Education	Target	Completion Rate
General Information Security	All employees	100%
Privacy Security	Personal information handlers (HR and Sales Teams)	100%

Strengthening Employee Information Security Awareness

- DL Chemical provides various information to our employees to raise their security awareness and alert them.
- In 2023, we created an information bulletin board to inform the latest security incident cases and threats.

Activities to Strengthen Security Capabilities

Activities	Description	No. of Cases
Provision of Information Security News	Information on the latest hacking cases and precautions	6
IT Trend Guide	Guide to using generative AI	4
Provision of system manuals	Providing a manual for using the computer system	17

DIGITAL TRANSFORMATION (DT)

DT Plan

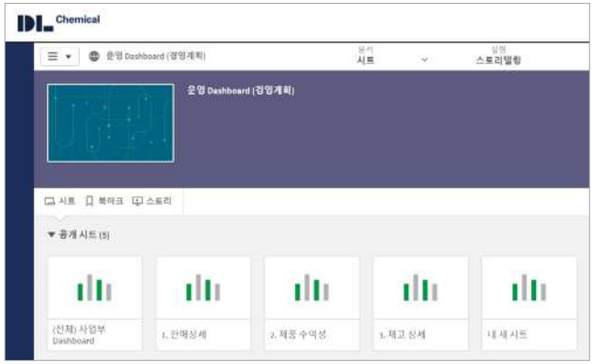
- DT Digital Transformation Initiative
  - We are pursuing DT by applying IT to our work systems and information.

- Upgrading ERP (Enterprise Resource Planning)
  - We perform PI & MP to review process and function improvements following an upgrade to the new SAPS4/HANA. We will begin building the system in 2024.

- Cloud transformation
  - As the business systems operated by the existing IDC are aging and periodic server replacement is required, they are converted to the cloud considering regular investment costs and equipment supply (Phase 1 in 2023, Phase 2 in 2024)

- Implementation of RPA (Robotic Process Automation)
  - In 2022, we Implemented RPA to advance DT, by which software robots could take over simple/repetitive tasks humans perform.
  - In 2023, we evaluated personal RPA, allowing each employee to handle and use RPA directly. Accordingly, we expect to increase work efficiency with one assistant per person for all employees.

- Providing manuals to use the internal systems and the latest IT utilization methods, such as generative AI effectively



Self BI-operating Dashboard (such as EIS)



HSE Portal

APPENDIX

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BUSINESS UNITS

DL Chemical

PE Business, the first domestic company to develop a proprietary mPE technology

D.FINE

Define new standards for the fine world

D.FINE is the brand of BOCD (Broad Orthogonal Composition Distribution), a next-generation metallocene polyethylene product developed by DL Chemical for the first time in Korea and the second in the world. Since the same performance can be achieved using less feedstock, plastic use can be reduced. Additionally, by increasing the mixing ratio of recycled resin, energy use and carbon emissions can be lowered.

Features

- The best toughness among similar products
- Improved stiffness
- Excellent processability and heat sealability
- Reduces feedstock, costs, and environmental burdens

Applications

- TIndustrial/logistics films
- Food and household goods packaging
- Agricultural films

Application



Liquid pouch



Flexitank liner

D.XPOLY

Polyethylene in the greatest degree of excellence

HDPE

Hexene comonomer allows DL Chemical's HDPE (high-density polyethylene) to have excellent long-term properties and impact strength.

Features

- Excellent long-term properties and impact strength
- Excellent product surface smoothness and thickness uniformity
- Excellent extrusion processability, applicable to various products

Applications

- Large industrial containers
- Roll bag, shopping bag, trash bag
- Small to medium sized containers
- Tarpaulin, woven bag, sunshade
- Industrial pipe
- Various injection molded products

Application



Drums

mLLDPE

DL Chemical's mLLDPE, successfully commercialized for the first time in Korea by applying proprietary metallocene catalyst technology, has superior mechanical and optical properties compared to ordinary LLDPE.

Features

- Cost savings through downgauging
- High toughness and transparency
- Increased packaging speed with lower processing temperatures

Applications

- Heavy packaging and shrink film
- Breathable film
- Lamination and agricultural film
- THeating pipe/water pipe
- Wrap and silage Film
- Rotational molded products (water tanks, etc.)

Application



Wrap and silage film

POE

POE is a high-value-added material that has recently been hailed as a 'new solar material.' DL Chemical was the first in the world to apply a gas-phase process and saved costs compared to the existing production process.

Features

- High power generation efficiency for solar panels
- High moisture barrier and impact strength
- Low density high elasticity

Applications

- Solar panel encapsulant (film)
- Automotive interior and exterior materials, lightweight parts
- Food packaging materials, shoes, wires, etc.

Application



Solar panel encapsulant

BUSINESS UNITS

DL Chemical

PB (Polyisobutylene) Business,
No. 1 in the global PB market with excellent product competitiveness

D.POLYBUTENE

The world best POLYBUTENE

DL Chemical successfully commercialized C-PB (conventional polyisobutylene) for the first time in Korea using its proprietary technology. It has the world's No. 1 production capacity (based on the open market data), leveraging stable supply and excellent quality. We successfully commercialized HRPB (highly reactive polyisobutylene) and exported the technology to the US market for the first time in Korea. In this way, we are leading the global market with our best technology.

Features

- C-PB (conventional polyisobutylene)
  - Excellent adhesion and insulation
  - Excellent chemical stability against heat and ultraviolet rays
- HRPB (high reactive polyisobutylene)
  - High percentage of vinylidene double bonds improves reactivity
  - Non-toxic, non-irritating, with excellent eco-friendliness

Applications

- Lubricant additives
- Fuel additives
- Industrial lubricants
- 2-stroke engine oil
- Tire sealants
- Adhesives & sealants
- Emulsifier for explosives
- Electrical insulating oil
- Stretch wrap film
- Polymer modifier
- Cosmetics
- Gum base

Application



Engine oil/fuel additives



Tire sealant

EPO (Ethylene Propylene Oligomer) Business,
Offering viscosity modifier developed with proprietary metallocene catalyst technology

D.SYNOL

The premium VISCOSITY MODIFIER

This is an EPO-structured synthetic oil that utilizes DL Chemical's proprietary metallocene catalyst technology and process know-how. We can improve customer cost competitiveness by providing fuel efficiency and durability through excellent oxidation stability, low-temperature resistance, and shear stability.

Features

- Used as an additive to improve lubricant viscosity index
- Excellent shear stability, thermal and oxidation stability
- It is a non-toxic product and can be applied to lubricants certified by the EU Eco Label.

Applications

- Industrial gear oil
- Car gear oil
- Engine oil
- Hydraulic oil
- Compressor oil
- Grease
- Rubber process oil
- Cable jelly
- Defoamer

Application



Automobile gear oil



Hydraulic oil

BUSINESS UNITS

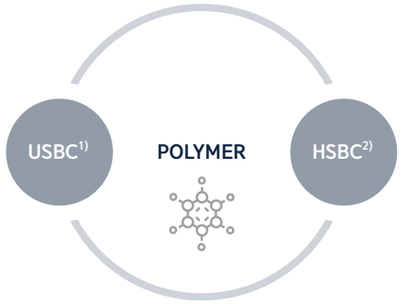
Subsidiary – Kraton

The global leader in specialty polymers and pine chemicals

KRATON

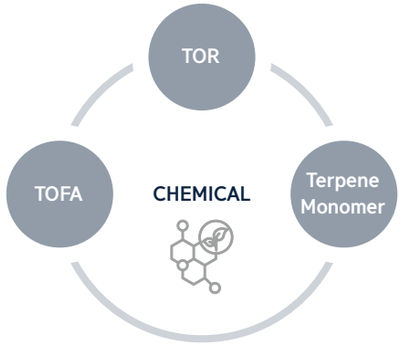
Kraton, which we acquired in March 2022, operates 13 production facilities and 8 R&D centers in key markets worldwide. It is a global leader in specialty polymers and advanced materials, holding over 1,000 patents. Kraton's flagship product is SBC (Styrene Block Copolymer), which it pioneered, holding the largest market share in the US and Europe. The product is used in sanitary adhesives, medical device materials, automotive interior materials, and 5G communication cables. In addition, as the world's largest biochemicals company producing sustainable products by refining the by-products of the pine wood pulping process, Kraton addresses market needs for eco-friendly chemical products.

Business Units



Inventor of SBC with world No. 1 hydrogenation technology

- Polymer Business (SBC): SBC is a thermoplastic elastomer with rubber-like characteristics and plastic processability.
- Kraton was the first company to begin commercial production of SBC in 1964. Its SBS business has two product lines: USBC and HSBC. Based on production capacity, Kraton ranks first in the US and European SBC markets. The products are used in everyday materials, including asphalt for paving, shoe adhesives, and cosmetic tubes.



Sustainable solutions provider utilizing renewable resources

- Chemical Business (TOFA, TOR, Pitch): High-value eco-friendly products using bio-based feedstocks.
- Kraton expanded its business into advanced materials by acquiring Arizona Chemical in 2016. It refines CTO (Crude Tall Oil) and CST (Crude Sulfate Turpentine) deriving from the pulping process to produce sustainable biochemical products, such as TOFA (Tall Oil Fatty Acids) and TOR (Tall Oil Rosin).

1) USBC: Un-hydrogenated SBC
2) HSBC: Hydrogenated SBC

R&D Competencies

Kraton develops new polymer and pine chemical products through its research organizations. It delivers customer value by providing solutions and technical services that meet customer needs. In addition to R&D for existing product lines, it is actively engaged in efforts to develop new innovative products.

- Anionic polymerization technology
- Cationic polymerization technology
- Molecular structure design – physical property relationships
- Kraton can develop various products in scales ranging from grams to tons.



Asphalt modifier

Application



Medical supplies



Tackifying resin

BUSINESS UNITS

Subsidiary – Cariflex

No. 1 in the global IRL market for surgical gloves

Cariflex produces synthetic rubber latex for medical and healthcare applications, using isoprene as its main feedstock. It is the No. 1 company in producing and supplying feedstock for synthetic rubber gloves for surgical use. It is the only company that produces IR Latex and Solid IR through anionic polymerization reaction. To respond to growing global market demand, it is building the world's largest polyisoprene latex plant in Singapore, where it is headquartered, aiming to begin commercial production in the second half of 2024.

Flagship Products

IRL (Isoprene Rubber Latex)
- Safer replacement for natural rubber latex, which can cause allergies
- Excellent elasticity, softness, and texture
- IRL produced through chemical impurity removal and anionic polymerization is suitable for high-quality medical supplies such as surgical gloves.

IR (Isoprene Rubber)
- Excellent chemical purity, transparency, and flowability
- It does not contain natural rubber proteins or carcinogenic nitrosamines

R&D Competencies

Cariflex has R&D centers in Amsterdam and Malaysia and holds approximately 127 patents based on its outstanding proprietary technology in synthetic rubber.

- Proprietary latex dispersion technology
- Latex Compounding Technology
- Ultra-high purity polyisoprene production technology through anionic polymerization
- Possesses know-how on structure, properties, processing, and application required for polyisoprene production

Application


Surgical gloves


Adhesives for medical and food packaging


Stoppers

Subsidiary – DL FnC

A plastic processing specialist with special-purpose coating solutions

DL FnC is a company that specializes in plastic processing. Based on Korea's No. 1 production capacity for BOPP film, it is engaged in the BOPP, EVA, and coating solution business, producing differentiated, high-value products through 5-layer facilities. In addition to stable BOPP film quality, the company holds specialized coating technology that provides soft texture, scratch resistance, and digital printing. It supplies special film solutions in the US and European markets.

Flagship Products

BOPP film
- High transparency and ease of printing
- High resistance to discoloration, scratches, and static electricity

EVA coating film

- Multi-layer coating film using EVA resin
- Stable production by unifying production from BOPP film to EVA coating

Application


Food packaging


Tapes


Paper coating


Decoration sheets

BUSINESS UNITS

Subsidiary – D-REX Polymer

Harmless adhesive material producer with market-leading technologies

D-REX Polymer, jointly established by DL Chemical and US REXtac in September 2021, is an eco-friendly adhesive material producer. D-REX Polymer has secured differentiated competitiveness through REXtac's technology, DL Chemical's plant operation/management capabilities, and stable feedstock procurement. Compared to other adhesive materials, its product has virtually no harmful or anti-environmental substances or odor, making it suitable for sanitary products sensitive to consumer safety. It is also widely used in industrial products, such as automobile interior and exterior materials, and consumer products, such as filters and mattresses.

Flagship Products (non-exhaustive)

APAO (Amorphous poly alpha olefin)

- Adhesion to various substrates
- Heat and cold resistance
- Easy to control physical properties (physical properties, such as viscosity and softening point, can be adjusted with different blending rates)

Application



Personal hygiene products



Special packaging



Vehicle interior parts



Air filters

Affiliate – Yeochun NCC

A stable raw material producer with accumulated technological know-hows

Yeochun NCC is one of the leading NCCs (Naphtha Cracking Centers) in Korea located in the Yeosu National Industrial Complex. Based on its plant operation know-hows accumulated over 50 years, it has made continuous process improvements. It produces various basic feedstocks of the petrochemical industry, such as ethylene, propylene, butadiene, benzene, toluene, xylene, and styrene monomer for domestic and overseas customers.

Flagship Products (non-exhaustive)

Ethylene
- A major petrochemical monomer
- Feedstock for synthetic fibers and plastics widely used in everyday life, such as PE, PVC, PET, etc.

Propylene
- A major monomer widely used along with ethylene
- Feedstock such as PP (polypropylene), PO (propylene oxide), AN (Acrylonitrile)

Butadiene
- Core feedstock for synthetic rubber and other industrial materials
- Synthetic rubber used in tires and shoes, and ABS used in automobile interior and exterior materials

Application



Polyethylene resin



Polypropylene resin

Affiliate – PolyMirae

A PP solution market leader with global top-tier technologies

PolyMirae, a PP-specialized manufacturer, is a joint venture between DL Chemical and LyondellBasell established in 2000. It produces specialty PP products with LyondellBasell's technology and supplies more than 140 products in more than 40 countries worldwide through the strong sales networks of Daelim and LyondellBasell.

Flagship Products (non-exhaustive)

Homopolymer (HOMO)
- Thermoplastic resin produced through propylene polymerization
- Excellent mechanical properties (stiffness, tensile strength, etc.)
- Block/impact copolymer (HECO)
- Thermoplastic resin produced through polymerization of propylene and EPR (Ethylene Propylene Rubber)
- Excellent strength, impact resistance and other mechanical properties

Random copolymer (RACO)
- Thermoplastic resin produced by polymerization of propylene and ethylene
- Excellent transparency and gloss properties

Application



Auto parts



Industrial and consumer products



Masks



Packaging materials

ECONOMIC PERFORMANCE

Consolidated Statement of Comprehensive Income(Creation of Economic Value)

	Unit	2021	2022	2023
Sales	KRW 100 million	16,045	45,593	43,437
Cost of goods sold	KRW 100 million	13,606	37,052	36,622
Gross profit	KRW 100 million	2,439	8,542	6,816
Operating profit	KRW 100 million	1,204	1,910	(396)
Income before tax	KRW 100 million	2,666	(956)	(4,031)
Net income	KRW 100 million	2,283	(1,024)	(3,294)

Consolidated Statement of Financial Position

	Unit	2021	2022	2023
Total current assets	KRW 100 million	19,850	22,587	21,064
Total non-current assets	KRW 100 million	20,144	53,382	55,104
Total Assets	KRW 100 million	39,994	75,969	76,168
Total current liabilities	KRW 100 million	9,162	14,817	18,001
Total non-current liabilities	KRW 100 million	8,366	38,782	39,291
Total liabilities	KRW 100 million	17,528	53,599	57,292
Capital stock	KRW 100 million	457	457	457
Other paid-in capital	KRW 100 million	19,223	19,223	19,223
Retained earnings	KRW 100 million	2,311	339	(3,633)
Non-controlling interest	KRW 100 million	98	816	781
Total capital	KRW 100 million	22,466	22,370	18,876

Stability based on Consolidated Financial Statements

	Unit	2021	2022	2023
Liquidity ratio	%	216.65	152.44	117.02
Debt-to-Asset ratio	%	78.02	239.60	303.52
Capital adequacy ratio	%	56.17	29.45	24.78

ESG Data

Environment

Greenhouse Gases (GHGs)

Category		Unit	2021	2022	2023	Note
Total GHG emissions (Scope 1, 2)	South Korea	tCO_2e	249,734	222,822	216,120	
	Emissions intensity	tCO_2e/KRW 100 mil.	17.00	12.17	13.45	Emissions/Sales (Domestic)
Scope 1 (Direct emissions)	South Korea	tCO_2e	2,160	2,166	2,267	
Scope 2 (Indirect emissions)	South Korea	tCO_2e	247,574	220,656	213,853	
Scope 3 (Other indirect emissions)	Total	tCO_2e	2,428,831	2,204,843	2,002,889	
	Purchased goods (raw and subsidiary materials) and services	tCO_2e	2,387,459	2,159,327	1,955,385	
	Capital goods	tCO_2e	639	1,003	1,538	
	Fuels and energy, excluding Scope 1 & 2	tCO_2e	7,355	6,455	6,494	
	Transportation & distribution (upstream)	tCO_2e	20,784	20,679	16,873	
	Waste generated	tCO_2e	2,045	2,335	2,126	
	Employee business travel	tCO_2e	78	268	448	
	Employee commuting	tCO_2e	392	396	410	
	Transportation & distribution (downstream)	tCO_2e	10,079	14,380	19,615	
Other air pollutant emissions	Total	ton	1.643	1.487	2.434	The sum of the Yeosu Plant and Daejeon R&D Center's emissions
	Nitrogen oxides (NOx)*	ton	0.261	0.440	2.070	
	Sulfur oxides (SOx)	ton	0.006	0.150	0.190	
	Dust	ton	1.376	0.897	0.174	

*Added based on the LPG usage of the Flare Stack at the Yeosu Plant in 2023

ESG Data

Environment

Energy and Water Use

Category			Unit	2021	2022	2023	Note
Energy		Total	TJ	4,899	4,344	4,193	The sum of non-renewable and renewable energy
	Non-renewable energy	Subtotal	TJ	4,899	4,344	4,193	The 2023 DLC Statements and Verification Report
		Fuel (gasoline, diesel, LNG)	TJ	39	38	31	
		Electricity	TJ	3,940	3,466	3,334	
		Steam	TJ	920	840	828	
	Renewable energy	Subtotal	TJ	-	-	-	
Energy consumption intensity		Energy use intensity	TJ/KRW 100 mil.	0.33	0.24	0.26	Total energy use/Sales
Performance in Energy Savings		Total	TJ	177	49	37	
		Fuel (gasoline, diesel, LNG)	TJ	-	-	-	Based on internal calculation data
		Electricity	TJ	106	28	14	
		Steam	TJ	71	21	23	
Water resources (withdrawal)		Total	ton	1,434,772	1,536,969	1,223,223	Water supply + surface water + underground water + discharged water
		Waterworks	ton	14,890	16,247	16,433	
		Third-party supply	ton	1,419,882	1,520,722	1,206,790	Industrial water supply
		Surface water (fresh)	ton	-	-	-	Freshwater, such as lakes and rivers * Freshwater: Water containing less than 1,000 mg of dissolved solids per liter * Other water types: Water containing over 1,000 mg of dissolved solids per liter
		Underground water	ton	-	-	-	
		Discharged water	ton	-	-	-	The amount of water treated and discharged with the quality equivalent to each water intake source
		Recycled water	ton	147	183	241	
		Water intensity	ton/KRW 100 mil.	97.67	83.98	76.15	Water use/Sales (KRW 100 mil.)

ESG Data

Environment

Waste

Category		Unit	2021	2022	2023	Note
Waste generated	Total	ton	5,959	11,460	6,683	HQs: Based on the recycling and discharge control books of the facility management company Yeosu Plant, Daejeon R&D Center: Allbaro System
	Non-hazardous waste	ton	5,381	10,797	6,045	
	Hazardous waste	ton	578	663	638	
Waste recycled/reused	Total	ton	2,645	7,400	3,611	
	General wastes	ton	2,188	6,848	3,168	
	Non-hazardous waste	ton	457	552	443	
	Hazardous waste	%	44	65	54	
Waste disposal	Total (Non-hazardous waste treated)	ton	5,381	10,797	6,045	Waste treated = Waste generated
	Recycle	ton	2,188	6,848	3,168	
	Landfill	ton	3,090	3,850	2,768	
	Incineration (energy recovery)	ton	103	99	109	Count change of 'General waste – other' to 'Incineration' in '21-'22
	Total (Hazardous waste)	ton	578	663	638	Waste treated=Waste generated
	Recycle	ton	457	552	443	
	Landfill	ton	6	3	4	
	Incineration (energy recovery)	ton	115	108	191	

Chemical

Category	Unit	2021	2022	2023	Note
Hazardous chemical use	ton	237,597	254,314	187,387	
Chemical discharge (PRTR)	ton	786	61	57	

ESG Data

Environment

Green purchasing

Category		Unit	2021	2022	2023	Note
Green purchasing performance	Green purchase amount	KRW 100 mil.	11	15	11	Purchased goods from EPD-verified, low-carbon, or GR-accredited suppliers
	Raw/subsidiary materials purchase amount	KRW 100 mil.	1,708	2,172	1,592	
	Green purchasing ratio	%	0.7	0.7	0.7	Green purchase amount/Total purchase amount

Green investment

Category		Unit	2021	2022	2023	Note
Green investment cost	Green investment	KRW mil.	329	2,237	4,120	The amount calculated according to the company's internal control standards, such as green business and technology R&D costs
	Environmental management cost	KRW mil.	869	254	225	Expenses incurred for environmental action or obtaining certifications, excluding R&D costs

Environmental education

Category		Unit	2021	2022	2023	Note
HQs (Environmental education)	Training hours	hour	-	-	381	The hours spent to complete external courses on environment, health, and safety or the integrated OEMS courses for leaders/operators
	No. of participating employees	person	-	-	87	
	Training hours per person	hour	-	-	4.4	Total hours/No. of participating employees
Onsite (environmental education and training)	Education and training hours	hour	-	-	2,037	
	No. of participating employees	person	-	-	302	
	No. of participating supplier employees	person	-	-	203	
	Training hours per person	hour	-	-	4.0	Total hours/(No. of employees + supplier employees)

ESG Data

Environment

Environmental laws

Category		Unit	2021	2022	2023	Note
Violation of law and regulations	No. of lawsuits filed	case	-	-	-	Each involving USD10,000 or above
	Total fines	KRW mil.	-	-	-	

Water resources management

Category			Unit	2021	2022	2023	Note
Water pollution index	BOD	Concentration	mg/L	17	61	18	The National Pollution Sources Survey and the ENV-INFO System ※ To align with the calculated values in the ENV-INFO System, the figures have changed compared to the previous year's Sustainability Report.
		Discharges	kg	2,214	7,365	4,451	
	TOC	Concentration	mg/L	99	57	62	
		Discharges	kg	12,860	6,869	15,269	
	SS	Concentration	mg/L	53	33	39	
		Discharges	kg	6,799	3,920	9,507	
	TN	Concentration	mg/L	47	40	37	
		Discharges	kg	6,024	4,866	9,116	
	TP	Concentration	mg/L	0.59	0.15	0.14	
		Discharges	kg	77	18	34	

ESG Data

Society

Employees

Category		Unit	2021		2022		2023		Note
			Male	Female	Male	Female	Male	Female	
Total number of employees	Total	person	607	114	602	109	653	116	
	Domestic	person	599	105	592	100	642	108	
	Overseas	person	8	9	10	9	11	8	
	Female ratio (domestic)	%	14.9		14.5		14.4		No. of female employees/Total number of employees
	Female ratio (overseas)	%	52.9		47.4		42.1		No. of female employees/Total number of employees
By employment type	Total	person	607	114	602	109	653	116	
	Executives	person	28	–	25	–	22	–	Executives
	Permanent	person	544	57	540	57	586	66	General, professional, clerical workers and expert advisers
	Permanent (ratio)	%	89.6	50.0	89.7	52.3	89.7	56.9	
	Temporary	person	–	–	–	–	–	–	(Act on the Protection of Fixed-Term and Part-Time Employees, Act No. 17326)
	Daily worker	person	–	–	–	–	–	–	
	Outsourced workers	person	–	–	–	–	–	–	
	Temporary agency workers	person	1	22	–	14	–	15	
	Short-term workers	person							
	Others	person	34	35	37	38	45	35	Short-term workers, research advisors, project contract workers, and local hires
By age	Total	person	607	114	602	109	653	116	
	Under 30	person	79	55	86	46	111	51	Born in 1994 or after
	Between 30 and 50	person	342	59	317	63	329	65	Born between 1974 and 1993
	Over 50	person	186	–	199	–	213		Born in 1973 or before
By position	Total	person	607	114	602	109	653	116	
	Executive	person	28	–	25	–	22	–	Executives
	Middle manager	person	47	1	49	3	56	3	Team leaders (or their deputies), managers, business managers, research advisers, consultants
	Junior manager	person	151	22	143	24	148	26	Grade 1A, 1B, and 2
	Staff	person	381	91	385	82	427	87	Grade 3 or lower (including short-term technical advisers, and senior managers)

ESG Data

Society

Employees

Category		Unit	2021		2022		2023		Note
			Male	Female	Male	Female	Male	Female	
By nationality	Total number of employees	person	607	114	602	109	653	116	
	Korea	person	598	104	591	99	641	107	Disclosure of data on minorities/races
	Asia (excl. Korea)	person	9	9	11	9	12	9	
	Middle East	person	–	–	–	–	–	–	
	America*	person	–	1	–	1	–	1	
	Europe and Africa*	person	–	–	–	–	1	–	
Employees eligible for veteran's compensation or with disabilities	Total	person	22	–	20	–	18	–	
	No. of employees eligible for veteran's compensation	person	16	–	16	–	14	–	Employees who reported to the Ministry of Patriots and Veterans Affairs
	Ratio of employees eligible for veteran's compensation	%	2.6	0.0	2.7	0.0	2.1	0.0	No. of employees eligible for veteran's compensation/Total no. of employees
	No. of employees with disabilities	person	6	–	4	–	4	–	Refers to the domestic employees with disabilities (based on the Special Exception to Calculating of Number of Employees with Disabilities)
	Ratio of employees with disabilities	%	0.9	0.0	0.6	0.0	0.6	0.0	Σ (No. of full-time employees with disabilities per month)) / Σ (No. of full-time employees per month) Based on the actual number of employees even if the charges for not employing workers with disabilities have been paid. A person with severe disabilities who worked 16 or more qualifying days, or 60 or more hours per month was counted as 2 persons.
Race/Origin	Total	person	607	114	602	109	653	116	
	Black or African American	person	–	–	–	–	–	–	
	White	person	–	–	–	–	1	–	
	Indigenous or Native	person	598	105	591	100	641	108	
	Others	person	9	9	11	9	11	8	

*Employees working in international offices

ESG Data

Society

New hire

Category		Unit	2021		2022		2023		Note
			Male	Female	Male	Female	Male	Female	
By age	Total	person	148	70	148	35	251	40	
	Under 30	person	36	37	35	24	53	33	Born in 1994 or after
	Between 30 and 50	person	81	33	17	11	40	7	Born between 1974 and 1993
	Over 50	person	31	–	96	–	158	–	Born in 1973 or before
By position	Total	person	148	70	148	35	251	40	
	Executive	person	13	–	7	–	3	–	Executives
	Middle manager	person	7	–	1	–	2	1	Team leaders (or their deputies), managers, business managers, research advisers, consultants (including short-term team leaders, but excluding those who are executives)
	Junior manager	person	44	8	10	5	18	3	Grade 1A, 1B, and 2
	Staff	person	84	62	130	30	228	36	Grade 3 or lower (including short-term technical advisers, and senior managers)
By nationality	Total	person	148	70	148	35	251	40	
	Korea	person	140	59	146	34	250	40	
	Asia (excl. Korea)	person	8	10	2	1	–	–	
	Middle East	person	–	–	–	–	–	–	
	America	person	–	1	–	–	–	–	
	Europe and Africa	person	–	–	–	–	1	–	
By race	Total	person	140	60	148	35	251	40	
	Asian	person	140	60	148	35	250	40	
	Black or African American	person	–	–	–	–	–	–	
	White	person	–	–	–	–	1	–	
	Indigenous or Native	person	–	–	–	–	–	–	
	Other	person	–	–	–	–	–	–	
Internal recruiting ratio		%	49.0	21.3	58.9	46.2	47.2	45.2	No. of employees whose place of work or job was changed in a year/ (No. of new hires + No. of employees whose position was changed in a year)

ESG Data

Society

Resignation and Retirement

Category		Unit	2021		2022		2023		Note
			Male	Female	Male	Female	Male	Female	
By age	Total	person	61	14	141	38	194	33	
	Under 30	person	10	10	11	26	12	22	Born in 1994 or after
	Between 30 and 50	person	23	4	25	12	19	11	Born between 1974 and 1993
	Over 50	person	28	–	105	–	163	–	Born in 1973 or before
By position	Total	person	61	14	141	38	194	33	
	Executive	person	4	–	5	–	2	–	Executives
	Middle manager	person	3	–	3	–	2	1	Team leaders (or their deputies), managers, business managers, research advisers, consultants (including short-term team leaders, but excluding those who are executives)
	Junior manager	person	16	–	18	3	11	2	Grade 1A, 1B, and 2
	Staff	person	38	14	115	35	179	30	Grade 3 or lower (including short-term technical advisers, and senior managers)
By nationality	Total	person	61	14	141	38	194	33	
	Korea	person	61	13	141	37	194	32	
	Asia (excl. Korea)	person	–	1	–	1	–	1	
	Middle East	person	–	–	–	–	–	–	
	America	person	–	–	–	–	–	–	
	Europe and Africa	person	–	–	–	–	–	–	
By race	Total	person	61	14	141	38	194	33	
	Asian	person	61	14	141	38	194	33	
	Black or African American	person	–	–	–	–	–	–	
	White	person	–	–	–	–	–	–	
	Indigenous or Native	person	–	–	–	–	–	–	
	Other	person	–	–	–	–	–	–	

ESG Data

Society

Average length of service

Category	Unit	2021		2022		2023		Note
		Male	Female	Male	Female	Male	Female	
Domestic	year	14	5	14	6	13	6	It is identical to the data in the disclosed business report, provided that it was divided into male and female where appropriate.
Overseas	year	0	0	1	1	2	2	It is identical to the data in the disclosed business report, provided that it was divided into male and female where appropriate.

Childcare leave (based on permanent employees)

Category	Unit	2021		2022		2023		Note
		Male	Female	Male	Female	Male	Female	
No. of persons eligible for childcare leave	person	215	22	212	24	229	30	Those with a child aged 9 or below or in the 3rd grade in primary school
No. of persons who took childcare leave	person	2	1	5	7	3	6	Based on the number of those who took childcare leave as of December in the corresponding year
No. of returnees from childcare leave	person	–	–	2	1	2	1	The number of returnees after childcare leave as of the end of December in the corresponding year
Rate of returnees from childcare leave	%	0.0	0.0	40.0	14.3	66.7	16.7	(in each corresponding year) Return rate = No. of returnees/No. of those scheduled to return
No. of returnees from childcare leave who remained in service for 12 or more months upon return	person	–	–	2	2	–	–	Those who remained in service for 12 or more months after returning from childcare leave

Wages

Category		Unit	2021		2022		2023		Note
			Male	Female	Male	Female	Male	Female	
New hire wage/Minimum wage ratio	New permanent hire wage/Minimum wage ratio	time	1.97	1.97	1.93	1.93	1.93	1.93	New hire's wage/Minimum wage Minimum wage by year:

Retirement pension indicators

Category		Unit	2021		2022		2023		Note
			Male	Female	Male	Female	Male	Female	
Subscription by type	Fund value	KRW mil.	60,774	3,006	70,302	5,182	71,499	5,049	Based on the disclosed data (such as Business Reports)
	No. of subscribers (DC)	person	62	–	64	–	73	–	
	No. of subscribers (DB)	person	472	65	492	81	486	88	

ESG Data

Society

Performance appraisal indicators

Category		Unit	2021		2022		2023		Note
			Male	Female	Male	Female	Male	Female	
No. of employees subject to regular performance appraisal	No. of eligible employees	person	525	55	538	57	586	66	Including permanent and term workers
Proportion of employees subject to regular performance appraisal	Proportion of eligible employees	%	86	48	89	52	90	57	No. of employees subject to regular performance appraisal/Total no. of employees
Proportion of employees subject to MBO	Proportion of eligible employees	%	100	100	100	100	100	100	Proportion of eligible persons to those subject to regular performance appraisal

Labor Relations

Category		Unit	2021	2022	2023	Note
Labor–Management Council Operation	No. of Labor–Management Council meetings held	number	11	12	12	

Investment in Human Capital

Category	Unit	2021	2022	2023	Note
Return On Investment(ROI)	%	226	228	224	Based on the disclosed business report; Human Capital Return on Investment = Sales – (operating expenses – (wages + welfare cost))/(wages + welfare cost)

Government Subsidies

Category	Unit	2021	2022	2023	Note
Tax credit	KRW million	580	1,240	4,721	Based on the statement of tax adjustment

Supplier Management

Category			Unit	2021	2022	2023	Note
Shared growth	Management support	Support for safety consulting	number	–	–	8	Provided safety consulting for 6 suppliers of the Yeosu Plant and 2 of the R&D Center in 2023
Supplier grievance handling	Complaint receiving and handling	No. of complaints filed	number	–	–	–	
		No. of complaints handled	number	–	–	–	

ESG Data

Society

Employee Training

Category		Unit	2021		2022		2023		Note
			Male	Female	Male	Female	Male	Female	
By age	Total	hour	15,256	2,388	15,343	3,481	16,981	3,926	
	Under 30	hour	501	472	1,250	1,102	1,972	1,881	Born in 1994 or after
	Between 30 and 50	hour	9,478	1,916	9,251	2,379	10,667	2,045	Born between 1974 and 1993
	Over 50	hour	5,277	–	4,842	–	4,342	–	Born in 1973 or before
By position	Total	hour	15,256	2,388	15,343	3,481	16,981	3,926	
	Executive	hour	168	–	271	–	332	–	Executive
	Middle manager	hour	5,879	792	6,297	973	6,378	1,225	Manager – Sr. Manager
	Staff	hour	9,209	1,596	8,775	2,508	10,271	2,701	Staff – Deputy Manager
Training hours per program	Total	hour	15,286	2,388	15,347	3,586	17,151	3,926	
	General (job skills, leadership)	hour	9,290	948	9,387	2,200	10,027	2,734	
	ESG	hour	742	180	744	147	848	149	DL Group–hosted ESG Education
	Prevention of sexual harassment	hour	742	180	744	147	848	149	
	Ethics/CP	hour	742	180	744	147	848	149	
	Data security	hour	742	180	744	147	848	149	Compulsory education
	Disability awareness	hour	742	180	744	147	848	149	Compulsory education
	Prevention of workplace bullying	hour	742	180	744	147	848	149	Compulsory education
	Others	hour	1,514	360	1,492	399	1,866	298	Retirement pension, occupational health and safety (Compulsory education)
Educational performance	Total education cost	KRW mil.	162	32	149	45	165	44	Education/training expenses
	No. of participants*	person	742	180	744	147	848	149	Based on permanent workers
	Average education hours/person	hr/person	21	13	21	24	20	26	Total training hours/Total no. of employees as of the end of the year
	Education cost/person	KRW mil./person	0.22	0.18	0.20	0.31	0.19	0.29	Total education cost/No. of participating employees

*Includes contract workers hired for the Yeosu plant renovation project in 2023

ESG Data

Society

Social Contribution

Category		Unit	2021	2022	2023	Note
Investment in social contribution (rate)	Total	%	100	100	100	
	Charitable donation	%	0	20	33	Charitable Donation: Cash and in-kind donations, non-marketing-oriented cultural/art sponsorship, matching funds, monetary value of employee volunteer hours
	Community investment	%	100	80	60	Community Investment: Membership under local community-conscious strategies, donations or personnel dispatch to partners essential for local community-conscious strategies, training programs to promote local job creation
	Commercial initiatives	%	0	0	1	Commercial Initiatives: Local community-conscious activities for corporate success through raising brand awareness and promoting products/services, including university support and event sponsorship (provided that only the amount directly spent on partners/charities was entered)
Social contribution cost	Total donations	KRW mil.	49	56	57	Cash + monetary value of volunteer hours + in-kind + indirect expenses
	Total volunteer hours	hour	436	3,253	4,222	

Occupational Safety

Category		Unit	2021	2022	2023	Note
Accident and death rates	Total fatalities	person	-	-	-	
	No. of employee fatalities	person	0	0	0	No. of fatalities (covered by industrial accident compensation insurance) // Direct hires: permanent, part-time, hourly, and seasonal workers who are directly paid by the company
	Supplier fatalities	person	0	0	0	No. of fatalities (covered by industrial accident compensation insurance) // Indirect hires: Those who are not paid by the company but are supervised by the company, normally employed by an independent contractor or third party (such as a temp agency and labor broker)
	Death rate per 10,000 workers	%	0	0	0	No. of fatalities per 10,000 paid workers // Calculation formula: No. of fatalities/No. of paid workers×10,000
	Lost-Time Injury Frequency Rate (LTIFR) (employees)	case/200k work hours	0.00	0.00	0.15	LTFIR calculation formula: (No. of LTIs/No. of work hours)×200,000
	Lost-Time Injury Frequency Rate (LTIFR) (suppliers)	case/200k work hours	0.28	0.26	0.24	LTFIR calculation formula: (No. of LTIs/No. of work hours)×200,000
	Total LTIs	person	1	2	3	
	No. of employee LTIs	person	0	0	1	No. of LTIs (covered by industrial accident compensation insurance)
	No. of supplier LTIs	person	1	2	2	
Occupational diseases (illness)	No. of victims (employees) of occupational diseases	person	0	0	0	No. of cases approved as occupational diseases by the Korea Worker's Compensation & Welfare (classified as of the occurrence date)

ESG Data

Governance

Board of Directors (a.k.a BOD, Board)

Category			Unit	2021	2022	2023	Note
BOD Composition		Total	person	5	6	6	Disclosure statements submitted to DART / Annual business reports for 2021 to 2023 (base date: December 31)
		Inside directors	person	2	3	3	
		Outside directors	person	2	2	2	
		Other non-executive directors	person	1	1	1	
BOD Diversity	By gender	Total (by gender)	person	5	6	6	
		Male	person	5	6	6	
		Female	person	-	-	-	
	By age	Total (by age)	person	5	6	6	
		BOD members aged under 30	person	-	-	-	
		BOD members aged between 30 and 50	person	2	2	1	
		BOD members aged above 50	person	3	4	5	
		Rate of BOD members aged under 30	%	0	0	0	
		Rate of BOD members aged between 30 and 50	%	40	33	17	
		Rate of BOD members aged above 50	%	60	67	83	
	Minority within the BOD	Whether there is a minority within the BOD	Y/N	N	N	N	
BOD Meetings		No. of meetings held	number	15	9	9	
		No. of main report/resolution agenda items	number	58	35	22	
		Attendance rate	%	100	100	100	
BOD Effectiveness	BOD members' term of office	Average term (incumbent directors)	year	0.9	1.5	2.5	
	Guaranteed term of office after appointment	Inside directors	month	36	36	36	
		Outside directors	month	36	36	36	
		Other non-executive directors	month	36	36	36	
	BOD Expertise	No. of industrial experts	person	3	4	4	Number of persons with experience in the same industry
		No. of financial experts	person	2	2	2	No. of persons experienced in finance, accounting, financial affairs

ESG Data

Governance

Board of Directors

Category			Unit	2021	2022	2023	Note
BOD Operation	HR Committee*	No. of meetings held	number	2	3	1	
		Attendance rate	%	100	100	100	
	Audit Committee	No. of meetings held	number	4	6	7	
		Attendance rate	%	100	100	100	
	Finance Committee	No. of meetings held	number	5	4	2	
		Attendance rate	%	100	100	100	
	ESG Committee**	No. of meetings held	number	-	1	2	
		Attendance rate	%	-	100	100	
	External Auditor Remuneration	Audit fees paid	KRW 100 mil.	240	437	500	
		Non-audit fees paid	KRW 100 mil.	96	46	129	

*The Compensation Committee was integrated into the HR Committee on March 31, 2022.
**The ESG Committee was established in 2022.

Stakeholders

Category		Unit	2021	2022	2023	Note
Shareholders' Rights	Total No. of shares issued	share	9,130,964	9,130,964	9,130,964	
	No. of shares with voting rights	share	9,130,964	9,130,964	9,130,964	
	Other shares issued	share	-	-	-	

Ethics and Compliance

Category		Unit	2021	2022	2023	Note
Inspection of the fairness in internal transactions	No. of inspections performed	number	4	3	2	CP Inspection Report
	Self-inspection	number	1	1	2	
	Direct inspection	number	3	2	-	
	No. of internal violation reports	number	-	-	-	

ESG Data

Governance

Ethics and Compliance

Category			Unit	2021	2022	2023	Note
Internal compliance inspection		No. of inspections performed	number	15	29	24	CP education report
		Self-inspection	number	15	26	23	
		Unannounced inspection	number	-	3	1	
		No. of internal violation reports	number	-	2	3	
Confirmed corruption and measures taken		Total No. of cases	number	-	3	2	Violation of the Code of Ethics: Conflict of interests, bribery, abuse of authority or dominance position, unfair trade, unfair competition, money-laundering, breach of duty to manage material information, unauthorized use of internal information, impairing quality standards, bullying and discrimination, and other anti-environmental or anti-social conduct
		Cases subject to dismissal or disciplinary measure	number	-	3	2	
		No. of terminated relationships because of corruption	number	-	-	-	Contract termination or refused renewal
Business Ethics and Compliance Management Education	Business Ethics and Compliance Management*	No. of HQs/Onsite employees who completed the program	person	-	747	719	
		Rate of HQs/Onsite employees who completed the program	%	-	76	76	
	Anti-collusion	No. of the related department members who completed the program	person	-	121	101	Since the program targeted the related employees, it is stated as "target trainees & completion rate."
		Rate of the related department members who completed the program	%		83	100	CP education report
	Internal transactions	No. of the related department members who completed the program	person	173	150	129	Since the program targeted the related employees, it is stated as "target trainees & completion rate."
		Completion rate	%	67	86	100	CP education report
	Cases of violating the Subcontracting Act and countermeasures	No. of the related department members who completed the program	person	81	31	56	Since the program targeted the related employees, it is stated as "target trainees & completion rate."
		Rate of the related department members who completed the program	%	78	94	100	CP education report
	Anti-corruption policies	Rate of BOD members with whom the anti-corruption policy was shared	%	100	100	100	
		Rate of employees with whom the anti-corruption policy was shared	%	100	100	100	
Compliance (violation of law/ regulation)	No. of monetary sanctions	Based on the cumulative data provided by the compliance and accounting organizations	number	-	-	-	Disclosure statements submitted to DART / Annual business reports for 2021 to 2023 (base date: December 31)
	No. of non-monetary sanctions	Based on the cumulative data provided by the compliance and accounting organizations	number	-	2	4	
	Fines	Total	KRW 100 mil.	-	-	-	

*The company does not divide them into HQs and onsite workers.
※Based on separate financial statements

ESG Data

Governance

Ethics and Compliance

Category			Unit	2021	2022	2023	Note
Compliance (violation of law/regulation)	Environmental	No. of cases involving judicial punishment (fines, minor fines), or restricted participations in central/local government bidding	number	-	-	-	The Remarks section describes any cases of violations of permits or regulations in the jurisdiction related to the environment, including air and water quality (discharge of hazardous substances, violation of pretreatment requirements, or exceedance of TMDLs) against which an official execution is in progress or a final and conclusive judgment is made.
		Administrative monetary disposition	number	-	-	-	A final and conclusive judgment cases accompanying fines for negligence, penalty surcharges, or charges for compelling compliance
		Administrative non-monetary disposition	number	-	1*	1**	Confirmed judgment cases accompanying a corrective order/recommendation or warning
	Social	No. of cases involving judicial punishment (fines, minor fines), or restricted participations in central/local government bidding	number	-	-	-	The Remarks section describes any cases of violations of permits or regulations related to social issues, including the supply chain, workplace health and safety, and labor relations against which an official execution is in progress or a final and conclusive judgment is made.
		Administrative monetary disposition	number	-	-	-	A final and conclusive judgment cases accompanying fines for negligence, penalty surcharges, or charges for compelling compliance
		Administrative non-monetary disposition	number	-	1***	3****	A final and conclusive judgment cases accompanying a corrective order/recommendation or warning
	Personal Information	No. of cases involving judicial punishment (fines, minor fines), or restricted participations in central/local government bidding	number	-	-	-	The Remarks section describes any cases of violations of the relevant laws, such as the Monopoly Regulation and Fair Trade Act, related to corporate governance, against which an official execution is in progress or a final and conclusive judgment is made.
		Administrative monetary disposition	number	-	-	-	A final and conclusive judgment cases accompanying fines for negligence, penalty surcharges, or charges for compelling compliance
		Administrative non-monetary disposition	number	-	-	-	A final and conclusive judgment cases accompanying a corrective order/recommendation or warning
	Governance	No. of cases involving judicial punishment (fines, minor fines), or restricted participations in central/local government bidding	number	-	-	-	The Remarks section describes any cases of violations of the relevant laws, such as the Monopoly Regulation and Fair Trade Act, related to corporate governance, against which an official execution is in progress or a confirmed judgment is made.
		Administrative monetary disposition	number	-	-	-	A final and conclusive judgment cases accompanying fines for negligence, penalty surcharges, or charges for compelling compliance
		Administrative non-monetary disposition	number	-	-	-	A final and conclusive judgment cases accompanying a corrective order/recommendation or warning
	Ethical management/ Anti-corruption	No. of punishment cases corresponding to penalty surcharges, fines, imprisonment with labor, detention, or imprisonment	number	-	-	-	Based on the sum of the compliance and accounting organization: Based on the rulings made in the previous years for appeals: (including affiliates and subsidiaries if the company is a financial holding company): If application, the explanation is entered in the Remarks section.
		No. of punishment cases corresponding to fines for negligence, penalties, or charges for compelling compliance	number	-	-	-	"Cases under appeal are based on the rulings made in the previous year. (including affiliates and subsidiaries if the company is a financial holding company)"
		No. of non-monetary sanctions, such as corrective orders or suspension of business	number	-	-	-	Punishments other than penalty surcharges, fines, imprisonment with labor, imprisonment, detention, fines for negligence, penalties, and charges for compelling compliance

*On November 9, 2022, the Yeongsan River Basin Environmental Office issued an order to improve hazardous chemical handling facilities. **On December 10, 2023, the mayor of Yeosu issued an administrative disposition order (to conduct a detailed soil survey) because the company's soil pollutants (arsenic and fluoride) exceeded the Soil Contamination Warning Standard. ***On December 5, 2022, the Yeosu Fire Department issued an order to take action (correction) on the matters pointed out in the special fire inspection: 19 issues. ****On September 7, 2023, the Yeosu Fire Department issued an order to take action (correction) on the points raised in the fire safety inspection (formerly, special fire inspection): 5 issues. On September 8, 2023, the Yeosu Fire Department issued an order to take action (correction) on the points raised in the fire safety inspection (formerly, special fire inspection): 6 issues. On September 8, 2023, the Yeosu Fire Department issued an order to take action (correction) on the points raised in the fire safety inspection (formerly, special fire inspection): 1 issue.

Data Security

Category		Unit	2021	2022	2023	Note
Violation of data security	No. of data security violations	number	-	-	-	
	No. of customer privacy violations	number	-	-	-	Based on the sum of the compliance and accounting organizations, including the leakage of customer information
	Total fines and fines for negligence for violating data security	KRW	-	-	-	

GRI

Topic		Disclosure	Page	Note
GRI 1: Foundation 2021	Statement of Use	DL Chemical has followed the GRI standards to disclose its information regarding sustainable management from January 1, 2023 through December 31, 2023. A number of qualitative performances include those from the first half of 2024.		
	GRI 1 Used	GRI 1: Foundation 2021		
	Applicable GRI Sector Standard(s)	Not available (The standards applicable to the chemical industry where we belong have yet to be published as of the date of issuance, June 2023)		
GRI 2: General Disclosure 2021				
The organization and its reporting practices	2-1	Organizational details	5	
	2-2	Entities included in the organization's sustainability reporting	2, 6, 9-10	
	2-3	Reporting period, frequency and contact point	2	
	2-4	Restatements of information	-	Annotate where corrections occur
	2-5	External assurance	105-108	
Activities and Workers	2-6	Activities, value chain and other business relationships	6, 9-10, 76-78	
	2-7	Employees	85-86	
	2-8	Workers who are not employees	85	
Governance	2-9	Governance structure and composition	61	
	2-10	Nomination and selection of the highest governance body	61	
	2-11	Chair of the highest governance body	61	
	2-12	Role of the highest governance body in overseeing the management of impacts	64	
	2-13	Delegation of responsibility for managing impacts	64	
	2-14	Role of the highest governance body in sustainability reporting	17	
	2-15	Conflicts of interest	19	
	2-16	Communication of critical concerns	62-64	
	2-17	Collective knowledge of the highest governance body	61-63	
	2-18	Evaluation of the performance of the highest governance body	61	
	2-19	Remuneration policies	61	
	2-20	Process to determine remuneration	61	
	2-21	Annual total compensation ratio	-	Confidential

GRI

Topic		Disclosure	Page	Note
Strategy, policies and practices	2-22	Statement on sustainable development strategy	4	
	2-23	Policy commitments	15	
	2-24	Embedding policy commitments	42, 55, 65	
	2-25	Processes to remediate negative impacts	66	
	2-26	Mechanisms for seeking advice and raising concerns	42, 66	
	2-27	Compliance with laws and regulations	25, 34, 37, 42, 55, 65	
	2-28	Membership associations	104	
Stakeholder engagement	2-29	Approach to stakeholder engagement	20	
	2-30	Collective bargaining agreements	54	
GRI 3: Material Topics 2021	3-1	Process to determine material topics	20	
	3-2	List of material topics	21	
	3-3	Management of material topics	22	Reported where applicable for each issue
Economy				
GRI 201: Economic Performance (2016)	201-1	Direct economic value generated and distributed	79	
GRI 205: Anti-corruption (2016)	205-1	Operations assessed for risks related to corruption	69	
	205-2	Communication and training about anti-corruption policies and procedures	70	
	205-3	Confirmed incidents of corruption and actions taken	94	
GRI 206: Anti-competitive Behavior (2016)	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	-	No anti-competitive behaviour found
GRI 207: Tax	207-1	Approach to tax	70	
Environment				
GRI 302: Energy (2016)	302-1	Energy consumption within the organization	81	
	302-3	Energy intensity	81	
	302-4	Reduction of energy consumption	81	
GRI 303: Water and Effluents (2018)	303-2	Management of water discharge-related impacts	25	
	303-3	Water withdrawal	81	

GRI

Topic		Disclosure	Page	Note
GRI 305: Emissions (2016)	305-1	Direct (Scope 1) GHG emissions	80	
	305-2	Energy indirect (Scope 2) GHG emissions	80	
	305-3	Other indirect (Scope 3) GHG emissions	80	
	305-4	GHG emissions intensity	80	
	305-5	Reduction of GHG emissions	28	
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	80	
GRI 306: Waste	306-2	Management of significant waste-related impacts	25	
	306-3	Waste generated	82	
	306-4	Waste diverted from disposal	82	
	306-5	Waste directed to disposal	82	
GRI 308: Supplier Environmental Assessment (2016)	308-2	Negative environmental impacts in the supply chain and actions taken	56-58	
Society				
GRI 401: Employment (2016)	401-1	New employee hires and employee turnover	87	
	401-3	Parental leave	89	
GRI 403: Occupational Health and Safety (2018)	403-1	Occupational health and safety management system	37-41	
	403-2	Hazard identification, risk assessment, and incident investigation	41	
	403-3	Occupational health services	41	
	403-4	Worker participation, consultation, and communication on occupational health and safety	39-41	
	403-5	Worker training on occupational health and safety	41	
	403-6	Promotion of worker health	41	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	41	
	403-8	Workers covered by an occupational health and safety management system	37	
	403-9	Work-related injuries	92	
GRI 404: Training and Education (2016)	404-1	Average hours of training per year per employee	91	
	404-2	Programs for upgrading employee skills and transition assistance programs	45-47	
	404-3	Percentage of employees receiving regular performance and career development reviews	90	
GRI 405: Diversity and Equal Opportunity (2016)	405-1	Diversity of governance bodies and employees	85-86	
GRI 413: Local Communities (2016)	413-1	Operations with local community engagement, impact assessments, and development programs	52-53	
	414-2	Negative social impacts in the supply chain and actions taken	56-58	

SASB

TOPIC	CODE	METRIC	PAGE
Greenhouse Gas Emissions	RT-CH-110a.1(1)	(1) Gross global Scope 1 emissions	80
	RT-CH-110a.1(2)	(2) percentage covered under emissions-limiting regulations	100%
	RT-CH-110a.2	Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	16, 29
Air Quality	RT-CH-120a.1(1)	Air emissions of (1) NOx (excluding N2O)	80
	RT-CH-120a.1(2)	Air emissions of (2) SOx	80
	RT-CH-120a.1(3)	Air emissions of (3) volatile organic compounds (VOCs)	N/A
	RT-CH-120a.1(4)	Air emissions of (4) hazardous air pollutants (HAPs)	N/A
Energy Management	RT-CH-130a.1(1)	(1) Total energy consumed	81
	RT-CH-130a.1(2)	(2) percentage gridelectricity	N/A
	RT-CH-130a.1(3)	(3) percentage renewable	81
	RT-CH-130a.1(4)	(4) total self-generated energy	N/A
Water Management	RT-CH-140a.1(1)	(1) Total water withdrawn	81
	RT-CH-140a.1(1)	(1) percentage of each in regions with High or Extremely High Baseline Water Stress	0%
	RT-CH-140a.1(2)	(2) total water consumed	81
	RT-CH-140a.1(2)	(2) percentage of each in regions with High or Extremely High Baseline Water Stress	0%
	RT-CH-140a.2	Number of incidents of non-compliance associated with water quality permits, standards and regulations	96
	RT-CH-140a.3	Description of water management risks and discussion of strategies and practices to mitigate those risks	25
Hazardous Waste Management	RT-CH-150a.1	Amount of hazardous waste generated	N/A
	RT-CH-150a.1	percentage recycled	N/A

SASB

TOPIC	CODE	METRIC	PAGE
Community Relations	RT-CH-210a.1	Discussion of engagement processes to manage risks and opportunities associated with community interests	19, 52-53
Workforce Health & Safety	RT-CH-320a.1(1)	(1) Total recordable incident rate (TRIR) for direct employees	N/A
	RT-CH-320a.1(2)	(2) fatality rate for direct employees	92
	RT-CH-320a.1(3)	(3) Total recordable incident rate (TRIR) for contract employees	N/A
	RT-CH-320a.1(4)	(4) fatality rate for contract employees	92
	RT-CH-320a.2	Description of efforts to assess, monitor, and reduce exposure of employees and contract workers to long-term (chronic) health risks	41
Product Design for Use-phase Efficiency	RT-CH-410a.1	Revenue from products designed for use-phase resource efficiency	N/A
Safety & Environmental Stewardship of Chemicals	RT-CH-410b.1(1)	(1) Percentage of products that contain Globally Harmonised System of Classification and Labelling of Chemicals (GHS) Category 1 and 2 Health and Environmental Hazardous Substances	N/A
	RT-CH-410b.1(2)	(2) percentage of such products that have undergone a hazard assessment	N/A
	RT-CH-410b.2(1)	Discussion of strategy to (1) manage chemicals of concern	34-35
	RT-CH-410b.2(2)	Discussion of strategy to (2) develop alternatives with reduced human and/or environmental impact	8, 10-13, 34-35
Genetically Modified Organisms	RT-CH-410c.1	Percentage of products by revenue that contain genetically modified organisms (GMOs)	N/A
Management of the Legal & Regulatory Environment	RT-CH-530a.1	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	25, 34, 37, 42, 55, 65
Operational Safety, Emergency Preparedness & Response	RT-CH-540a.1(1)	(1) Process Safety Incidents Count (PSIC)	N/A
	RT-CH-540a.1(2)	(2) Process Safety Total Incident Rate (PSTIR)	N/A
	RT-CH-540a.1(3)	(3) Process Safety Incident Severity Rate (PSISR)	N/A
	RT-CH-540a.2	Number of transport incidents	N/A

TCFD

Topic	Subject of Recommendation	Page
Governance	a) Describe the board's oversight of climate-related risks and opportunities b) Describe management's role in assessing and managing climate-related risks and opportunities	17
Strategy	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2℃ or lower scenario	15-16, 28-29
Risk Management	a) Describe the organization's processes for identifying and assessing climate-related risk b) Describe the organization's processes for managing climate-related risks. c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management	28-29
Metrics and Targets	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets	16, 28-29, 80-81

UN SDGS

UN SDGs			Activities	Page
Goal 1		End poverty in all its forms everywhere	Briquette delivery volunteer	53
Goal 3		Ensure healthy lives and promote well-being for all at all ages	Emergency response drill Safety and health training Risk assessment HSE Dashboard	38–41
Goal 5		Achieve gender equality and empower all women and girls	Support for growth of female workers Family-friendly system	43, 51
Goal 6		Ensure availability and sustainable management of water and sanitation for all	Environmental training Emergency drill for environmental accidents Investment in pollution control facilities Advancement of chemical substance management system	24–26, 32–35
Goal 7		Ensure access to affordable, reliable, sustainable and modern energy for all	Response to climate change	28–29
Goal 8		Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Development of specialty materials Development of eco-friendly products Talent acquisition and fostering	8, 10, 33, 87
Goal 12		Ensure sustainable consumption and production patterns	Development of eco-friendly products Virtuous cycle of resources	8, 10–13, 33
Goal 13		Take urgent action to combat climate change and its impacts	Response to climate change Development of eco-friendly products Virtuous cycle of resources	28–29, 33
Goal 16		Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	Ethics and compliance management	65–70, 93–96

MEMBERSHIP AND INITIATIVE

Korea Petrochemical Industry Association (KPIA)

International Trade Association Korea Chemical Industry Council (KOCIC)

The American Chamber of Commerce in Korea (AMCHAM Korea)

Korea International Trade Association

Koran Institute of Chemical Engineers (KIChE)

United Nations Global Compact

The UN Global Compact (UNGC) encourages companies to internalize the 10 principles in the areas of human rights, labor, environment, and anti-corruption into their operations and strategies. This promotes sustainability and corporate citizenship by providing practical measures to achieve these goals. DL Chemical joined in 2023, demonstrating its commitment to these principles.

THIRD-PARTY ASSURANCE STATEMENTS

Dear Stakeholders of DL CHEMICAL CO., LTD.

Assurance Outline

Korea Productivity Center Quality Assurance (hereinafter "KPCQA") was commissioned by DL CHEMICAL CO., LTD. (hereinafter "DLC") to conduct an independent assurance on the 2024 ESG Sustainability Report (hereinafter "the report") and issues an assurance statement. DLC has sole responsibility for the preparation of the data within the report. KPCQA's responsibility is to provide objective opinions on this report with the specified criteria and scope of assurance.

Scope

This report describes DLC 's sustainability efforts and performance. The scope of assurance was included on activities from January 1, 2023 to December 31, 2023. Activities through 2024 has also been used in some areas. The report was assured focusing on the reporting of sustainable management policies, strategies, goals, businesses, and performance, and conformity of data collection and analysis, and the report creation process.

Criteria

The assurance was carried out in accordance with the following standards:

- AA1000AS v3
- KPCQA ESG Report Assurance Protocol

Levels

The assurance of this report was conducted in line with the requirements of the AA1000AS v3 Type 1(Adherence to the AA1000 four principles) at moderate level of assurance. The assurance was applied by professional judgement about materiality.

The report has been produced in accordance with GRI Standards. We confirmed that the report was complied with reporting principles of GRI Standards, Universal Standards, and Topic Standards based on the data and information provided by DLC.

Universal Standards

Organizational and its reporting practices 2-1~2-5, Activities and workers 2-6~2-8, Governance 2-9~2-21, Strategy, policies and practices2-22~2-28, Stakeholder engagement 2-29~2-30, Material topics 3-1~ 3-3

Topic Standards

Economic Performance 201 -1, Anti-corruption 205-1/205-2/205-3, Anti-competitive Behavior 206-1, Tax 207-1, Energy 302-1/302-3/302-4, Water and Effluents 303-2/303-3, Emissions 305-1/305-2/305-3/305-4/305-5/305-7, Effluents and Waste 306-2/306-3/306-4/305-5, Supplier Environmental Assessment 308-2, Employment 401-1/401-3, Occupational Health and Safety 403-1/403-2/403-3/403-4/403-5/403-6/403-7/403-8/403/403-9, Training and Education 404-1/404-2/404-3, Diversity and Equal Opportunity 405-1, Local Communities 413-1, Supplier Social Assessment 414-2

Methodology

- Review of Sustainability Performance Data and Management System
- Review of the reporting process and data management framework
- Review of materiality assessment process and Internal Analysis Procedure
- Review of media report on sustainability
- Interviews with executives and employees involved in material topics and report preparation
- Review of the overall report

THIRD-PARTY ASSURANCE STATEMENTS

Limitations

This assurance is limited assurance in limited criteria with comparative review of data provided by DLC. It has its own limitations depending on the characteristics and calculation method of the data.

Conclusions

KPCQA conducted assurance on the draft by review of the data, onsite verification and interview with the employees. It was confirmed that all errors identified during the assurance were corrected.
As a result of the assurance of this report, no material errors or improper descriptions have been found and the conclusions are as follows.

Inclusivity : Participation of stakeholders

DLC operates stakeholder communication channels to gather opinions from various stakeholders to derive material topics and ensure that they are reflected in decision-making.

Materiality : Selection and reporting of material topics

DLC presented sustainability performance data without any material omissions. Relating to the material issues in the report, nothing had come to our attention that would cause problem in decision-making process.

Responsiveness : Organizational response to issues

KPCQA checked and reviewed the data related to the internal and external stakeholders of DLC, we confirmed DLC identified the reporting scope and stakeholders' interests and reflected them. we confirmed DLC has management process of material topics through materiality assessment.

Impact : Monitoring and measurement of business activities

KPCQA reviewed DLC identified and monitored the impact of DLC's business activities on stakeholders. we confirmed the impact associated with material issues have been properly measured.

Independence of Assurance

KPCQA is a 3rd Party Conformity Assessment Body that conforms to ISO/IEC 17021:2015 and has documented policies, assessment processes, and quality assurance systems with assurance team of ESG experts.
KPCQA was not involved in any of the business operations of the DLC and the assurance was conducted with independence.

July 2024
Korea Productivity Center Quality Assurance
President **Jang Jean, Kang**

Kang Jang Jean

kpc 한국생산성본부인증원
KOREA PRODUCTIVITY CENTER QUALITY ASSURANCE

AA1000
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000-404/V3-QA410

GHG ASSURANCE STATEMENTS

Scope 1 & 2

1. Target of assurance

DL Chemical Co.,Ltd. 2023 Greenhouse Gas Emission Energy Usage Specifications

2. Assurance Standards

Assurance guidelines for operating the GHG emission trading system, guidelines for reporting and certification of GHG trading systems, emission plans distributed to NGMS(National GHGs Management System)

3. Assurance Procedures

The assurance was conducted on the greenhouse gas emission specification according to the guidelines on the reporting and certification of the GHG emission trading system and the emission plan distributed to NGMS, and the assurance level was performed to satisfy the reasonable assurance level

4. Assurance Data

DL Chemical Co.,Ltd 2023 GHG Emission

DL Chemical Co.,Ltd	Unit	Scope 1	Scope 2	Total
When allocating the 4th planning period Base Year Reference Emissions	tCO_2-eq/year	4,862	236,728	241,590
When submitting credits standard emissions	tCO_2-eq/year	2,267	213,853	216,120

※Reference : There is a difference in the amount of emissions and total emissions by greenhouse gas and the sum of the emissions by business site

5. Limitations

The assurance is applied with the sampling method in accordance with the assurance plan recognized by the National of Environmental Research for the specification of GHG emission and related data and information provided by DL Chemical Co.,Ltd., based on the “Regulated guidelines and emission plans distributed to NGMS.” Therefore, there is a limitation to the detection errors that can be caused by sampling limitation.

6. Opinions

DL Chemical Co.,Ltd.'s 2023 GHG emission Specification satisfies the materiality criteria and was prepared using accurate parameters and activity data as a whole. Therefore, it was decided that the greenhouse gas emissions described in the specification were “appropriate” according to the guidelines for reporting and certification of the greenhouse gas trading system.

7. Comprehensive Opinion

Through the assurance, it is certified that GHG emissions and energy consumption of DL Chemical Co.,Ltd. were appropriately collected, prepared and reported in accordance with the guidelines, and that emission facilities were calculated and reported without omission.

QUALITY ASSURANCE · KOREA GAS SAFETY CORPORATION ·

President of Korea Gas Safety Corporation.

Gyurng-Goog Bahk

GHG ASSURANCE STATEMENTS

Scope 3

Introduction

DNV Business Assurance Korea Ltd. ("DNV") was commissioned by DL Chemical Co.,Ltd.("Company") to perform third party verification for the Company's Greenhouse Gas Inventory Report ("the report") in the calendar year 2023. The Company is responsible for the preparation of the GHG emissions data on the basis set out within the 'ISO14064-1:2018' and 'WRI/WBCSD's Corporate Value Chain (Scope 3) Accounting and Reporting Standard'. Our responsibility in performing this work is to the management of the Company only and in accordance with terms of reference agreed with them. DNV expressly disclaims any liability or responsibility for any decisions, whether investment or otherwise, based upon this assurance opinion.

Objectives and scope of verification

The purpose of this verification is to present an independent verification opinion on the company's greenhouse gas emissions, and the scope of verification is as follows;

- Organizational Boundary: Head quarter and domestic worksites(Yeosu Plant and Daejeon R&D Center)
- Operational Boundary: Scope 3 (Other indirect emissions: Category 1, 2, 3, 4, 5, 6, 7, 9)
- Reporting period: 2023.01.01 ~2023.12.31

Verification Approach

The verification has been conducted in accordance with the verification principles and tasks outlined in the 'ISO 14064-3:2019', based upon a limited level of assurance. We planned and performed our work so as to obtain all the information and explanations deemed necessary to provide us with sufficient evidence to provide a verification opinion with 5% materiality level, concerning the completeness of the emission inventory as well as the reported emission figures in ton CO_2 equivalent. As part of the verification process, we have reviewed as follows.

- Process to generate, aggregate and report the emissions data
- The data and information supporting the report were based on historical in nature. May include partially hypothetical and projected data and information (refer to the report for details)

Conclusions

Based on the process and procedures conducted, there is no evidence that the GHG statement is not materially correct and is not a fair representation of GHG data and information;

- DNV presents an 'Unmodified' opinion on Greenhouse Gas Emissions

Catagory	Upstream	Downstrea)	Total
2023	1,983,274	19,615	2,002,889

※ In order to report the GHG emissions as an integer, the rounded number on the opinion might be different from the number on the system with ± 1 tCO_2eq

03 May 2024 Seoul, Korea
Country Representative
DNV Business Assurance Korea
Jang-Sub Lee



This Verification Opinion is valid as of the date of the issuance. Please note that this Verification Opinion would be revised if any material discrepancy which may impact the Greenhouse Gas Emissions of the company is subsequently brought to our attention.

DL Chemical

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GLOBAL DEVELOPER

2024 SUSTAINABILITY REPORT