



# CHALLENGE THE FUTURE SHARE THE FUTURE

Sustainability Report  
2021



## About This Report

Establishing the vision and strategy for ESG (Environmental, Social, and Governance) management in 2021, ISU Chemical published its first sustainability report to manage and disclose ESG management directions and performances in a systematic and transparent manner. The contents were prepared based on the concept of “3I (Innovation, Impact, Integrity)”, which is our ESG management strategy direction. Going forward, we will be proactive in listening to stakeholders' voices and announcing critical sustainability issues we face.

## Reporting Principles

This report was prepared in compliance with the Core Option of the GRI (Global Reporting Initiative) Standards. Financial performance was compiled based on non-consolidated financial statements of the Korea International Financial Reporting Standards (K-IFRS). It also includes our commitments and practices aimed at achieving US SDGs and responding to recent global initiatives such as SASB (Sustainability Accounting Standards Board) and TCFD (Task Force on Climate-related Financial Disclosure) to meet increasing the significance of non-financial values.

## Reporting Period and Scope

This report presents our activities and performances from January 1 through December 31, 2021. The period of some significant data is extended to the first half of 2022. Quantitative data from the last three years are provided to show year-on-year trend. Reporting scope covers the head office in Seoul, Ulsan Plant, and Onsan Plant. There are no significant changes in the organization and supply chain.

## Assurance

The quality of reporting contents and reliability of data were verified by KMR (Korea Management Registrar), a third-party assurance institution. The assurance statement can be found on page 80.

## Contact

Homepage: [www.isuchemical.com](http://www.isuchemical.com)  
E-mail: [esg@isu.co.kr](mailto:esg@isu.co.kr)  
Tel: +82-2-590-6600

# Contents

02	About This Report
04	Message from the CEO
06	Message from the Management

## Company Overview

09	Company Profile
11	Global Network
12	Main Products
14	Milestones
16	Introduction to ISU Group

## ESG Performance

32	<b>Strategic Direction 1 - Innovation</b> Sustainable Environmental Innovation
38	<b>Strategic Direction 2 - Impact</b> Social Impact Creation
54	<b>Strategic Direction 3 - Integrity</b> Transparent Business Operation

## ESG Factbook

65	ESG Performance Data
----	----------------------

## ESG Management

19	ESG Management Strategy
22	Special Section: Sustainable Innovation
26	Materiality Assessment

## Financial Performance

63	Financial Statements
----	----------------------

## Appendix

75	Index: GRI, SASB, TCFD
80	Third Party Assurance Statement
82	Initiatives & Association Membership

## Message from the CEO

# Challenge the Future, Share the Future.

“ISU Chemical will take on the challenge to usher in the sustainable future and share the affluent future with stakeholders.”



Dear esteemed stakeholders, I am the CEO of ISU Chemical, Seung-ho Lyu.

As we publish the 2021 sustainability report, I sincerely thank shareholders, customers, affiliates, local communities, and employees for your interest and support extended to ISU Chemical. COVID-19 has demonstrated that we should take urgent actions to respond to the global agenda of climate change and find a solution for a sustainable future.

We are going through the era of a great paradigm shift marked by the convergence of new ICT and digital transformation. Under the management philosophy of “Create beautiful future with abundance and convenience”, ISU Chemical will endeavor to accomplish sustainable growth to overcome the era of change by closely engaging with stakeholders.

### **We will lay the foundation for sustainable growth built upon the ESG management.**

Having established the set of ESG management strategies in 2021, ISU Chemical is now set to implement the systemic ESG management with the year 2022 marking the beginning of ESG management. To that end, we set the “2030 3I (Innovation, Impact, Integrity)” as the strategic direction based on the inputs from internal and external stakeholders while carrying out specific implementation tasks. We also formed the ESG Management Committee for the purpose of embedding the ESG management into the company-wide activities and managing the implementation status in a more systematic manner. We will develop the long-term ESG strategy and the policy.

### **We will explore new business for a sustainable future.**

ISU Chemical is not just committed to growing the existing business. We strive to develop innovative and sustainable products and seek new business opportunities. How ISU Chemical is shaping the recent business portfolio represents the future of technology we envision: the core raw material for sulfide-based solid electrolytes of all-solid-state battery ‘Li<sub>2</sub>S’; safe and efficient high-density hydrogen storage technology ‘LOHC’; and ‘smart farm’ for food security and food production in the future. ISU Chemical promises to efficiently cope with a variety of risks in the changing society in the future and seize new opportunities to realize sustainable growth.

### **We will remain committed to practicing the ESG management.**

As we practice the activities mentioned above, we will drive the ESG management in a clear and honest manner. We worked hard to ensure that this report presents the object data on sustainability management on a variety of fronts. This year’s sustainability report, published for the first time, will mark the beginning of our commitment to carrying out the ESG management as the key competitive edge of our business. Along the journey towards sustainable management, ISU Chemical promises to develop into a company its employees feel proud to work for and grow together.

### **Dear stakeholders,**

ISU Chemical will remain vigilant in navigating the era of change with our stakeholders. Every change comes with an opportunity. We will remain relentless in advancing the beautiful future that adds to the abundance and convenience of our life. ISU Chemical asks for our stakeholders’ lasting encouragement and support as we exercise efforts to drive sustainable growth.

June 2022

CEO, Lyu Seung-ho

류승호

## Message from the Management



**Joo Bong-jin**  
Director of Business Planning &  
Development Division

To ensure the sustainable development of a company, it is more important than anything else to identify potential risks that may arise from the management environment at all times and take appropriate countermeasures. ISU Chemical is equipped with the system to analyze environmental, social, and governance risks in key ESG management and respond to all types of potential risks. We will keep monitoring to make sure that the system works.

We will also explore the new growth engine for the future and achieve carbon neutrality. ISU Chemical promises to invest company-wide resources in identifying new business opportunities in the hydrogen-related area as an eco-friendly business.



**Im Tae-gi**  
Director of Finance & General Affairs  
Division

ESG is emerging as a concern for businesses around the world, prompting companies to take measures. ISU Chemical will catch up with the global trend in management for the purpose of enhancing its sustained competitive edge.

We will let our talented employees to further develop their capacity by achieving goals in the wide spectrum that ranges from environment and safety to governance and build a system where the outcomes translate into financial achievements.



**Park Seung-cheol**  
Director of Marketing Division

Sustainable supply chain management has risen as the global challenge in the post-COVID-19 era. ISU Chemical conducts customer satisfaction surveys on a regular basis to identify the fast-changing consumer needs and offer customized products and services. The survey results are used to exercise company-wide efforts to develop safe products and improve product quality. We will strive to raise our ESG standards to live up to customers' expectations for sustainability.

ISU Chemical will also build a management system for a sustainable supply chain. To that end, we will establish the code of conduct for affiliates and recommend policies on human rights, encouraging our employees as well as all stakeholders to observe.



**Kim Dong-min**  
Director of Safety & Production Division

Safety is rising as a matter of concern in our society with the introduction of the Serious Accidents Punishment Act and the ESG management. However, regardless of the legislation, it is our duty to prevent accidents by enhancing safety standards. I will do my best to raise safety awareness and introduce the SHE system to create a safe working environment for myself and for my colleagues.

It is the duty and the challenge for all the members of society to achieve carbon neutralization by 2050. However, we know that every crisis comes with opportunity as the shift to a low-carbon economy is accelerating across the world. ISU Chemical promises to join the social endeavor to develop technology to reduce GHG and energy consumption and cut carbon emissions.



**Kim Chang-gook**  
Director of R&D Division

ISU Chemical has been developing a wide variety of special value-added chemical products through constant R&D based on the detergent material industry. The petrochemical industry, however, is now faced with changes and innovations marked by carbon reduction and eco-friendly energy development in the post-COVID-19 era. ISU Chemical will identify the latest market trends and consumer needs through our differentiated technology and competence to ensure sustainable growth. We are striving to develop a new growth engine and high value-added industry by developing products for the future such as Li2S and LOHC. We are also enhancing R&D management to realize the vision of sustainable business and technological innovation, thus securing our distinct speciality.



**Lee Kyoung-soo**  
Director of Green Bio Biz. Devison

Amid the mounting uncertainties resulting from climate change, COVID-19, and regional conflicts, the agricultural issues such as eco-friendliness and food resources are becoming increasingly critical across the world.

ISU Chemical sees the smart farm business converged with sophisticated technology such as energy and ICT as the future growth engine and is operating the 5-hectare smart farm plant in China. We also carried out an agriculture startup education program for youth in partnership with Euisung County as well as an overseas agriculture support project as part of ODA programs. We are currently working to develop farming technology for high value-added and high-profit crops using ICT convergence smart farm by drawing upon the experience obtained so far.

We will establish distinctive business models through smart farm technology as we work toward the goal of becoming a leading smart farm business.



# COMPANY OVERVIEW

- 09 Company Profile
- 11 Global Network
- 12 Main Products
- 14 Milestones
- 16 Introduction to ISU Group

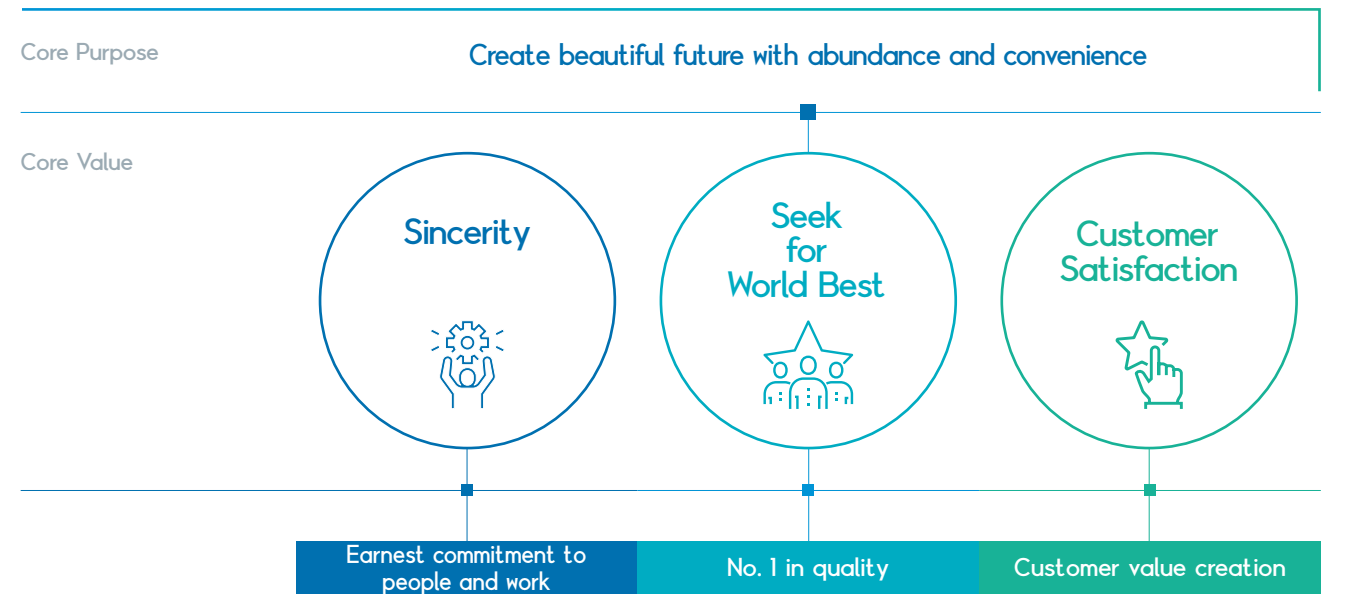


## Company Profile

ISU Chemical has been recognized for its global competitiveness not only in petrochemical but also in specialty chemical sectors through continuous innovation and investment in R&D. We aim to grow into a global innovative company leading the future value by upgrading our business areas from synthetic detergent raw materials to specialty chemicals, biopharmaceuticals and smart farms.

<b>Establishment</b>	January 17, 1969	<b>Business domain</b>	Petrochemical products, specialty chemical products, smart farm business, etc.
<b>CEO</b>	Lyu Seung-ho	<b>Sales</b>	KRW 1,318.7 billion (non-consolidated basis)
<b>Headquarters</b>	84, Sapyeong-daero, Seocho-gu, Seoul	<b>Operating profit</b>	KRW 77.6 billion (non-consolidated basis)
<b>Employees</b>	421 persons (based on 2021 Business Report)	<b>Net profit</b>	KRW 38.8 billion (non-consolidated basis)
<b>Subsidiaries</b>	7 (3 domestic, 4 overseas)		
<b>Subsidiary name</b>	ISU E&C, ISU Abxis, HANGARAMPONICS, ISU Chemical Germany GmbH, Great Orient Chemical Pte. Ltd., Shandong Dongming ISU Chemical Co., Ltd., ISU Longkun Agricultural Development Co., Ltd.		

## Core Purpose & Core Value

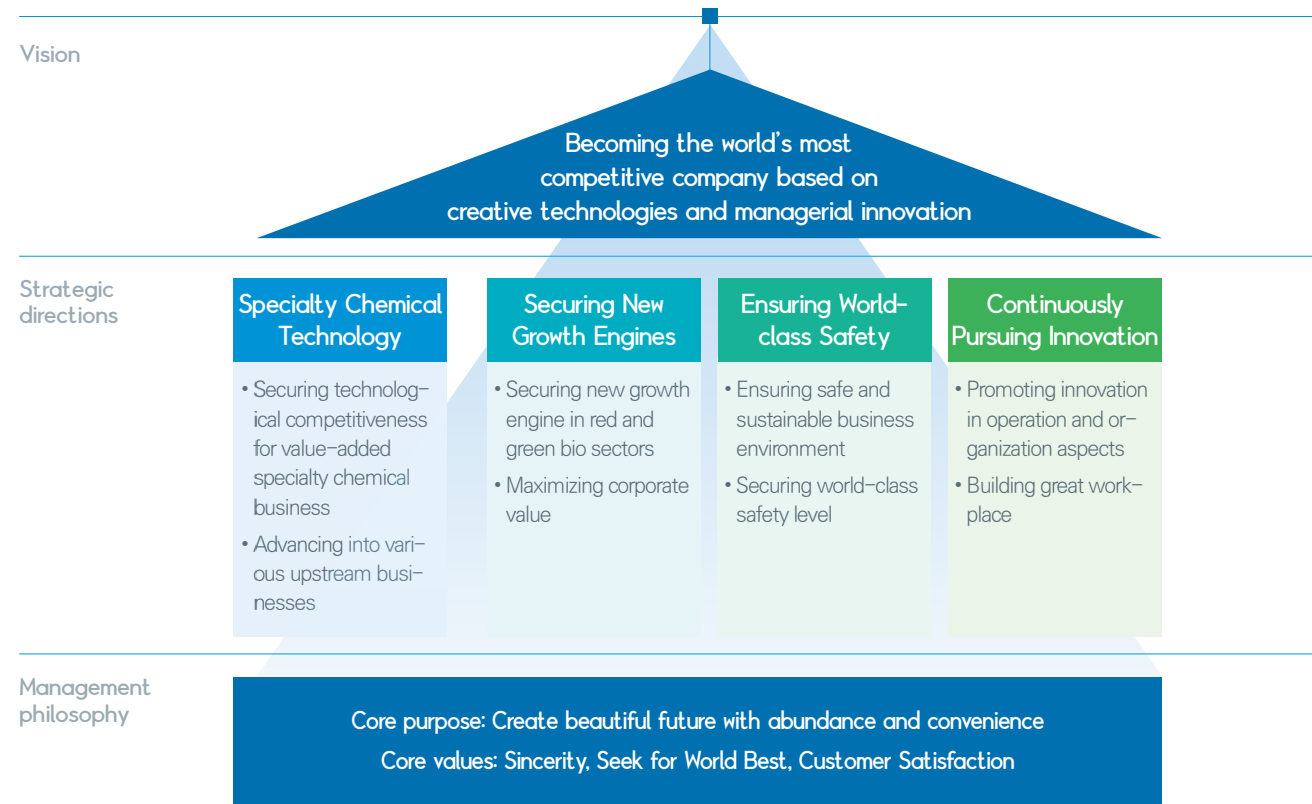


ISU Chemical's management philosophy consists of core purpose and core values. The core purpose is "Create beautiful future with abundance and convenience," and core values are defined as "sincerity," "seek for world best," and "customer satisfaction." Particularly, core values are applied to field works by setting specific behavioral principles. "Sincerity" means earnest commitment to people and work, and behavioral principle stipulates respect for character, continuous development of abilities, growth through work, sincerity and responsibility for work, honesty, and clear attitude. "Seek for world best" pursues No. 1 in quality and improving work processes, striving to become the world's best, setting bold goals and moving quickly, and learning from success and failure are set as the behavioral principle. The behavioral principle of "Customer satisfaction" aimed at customer value creation includes a clear understanding of current and future customers, respect for customers, supply of better products and services, and stronger customer relationship.

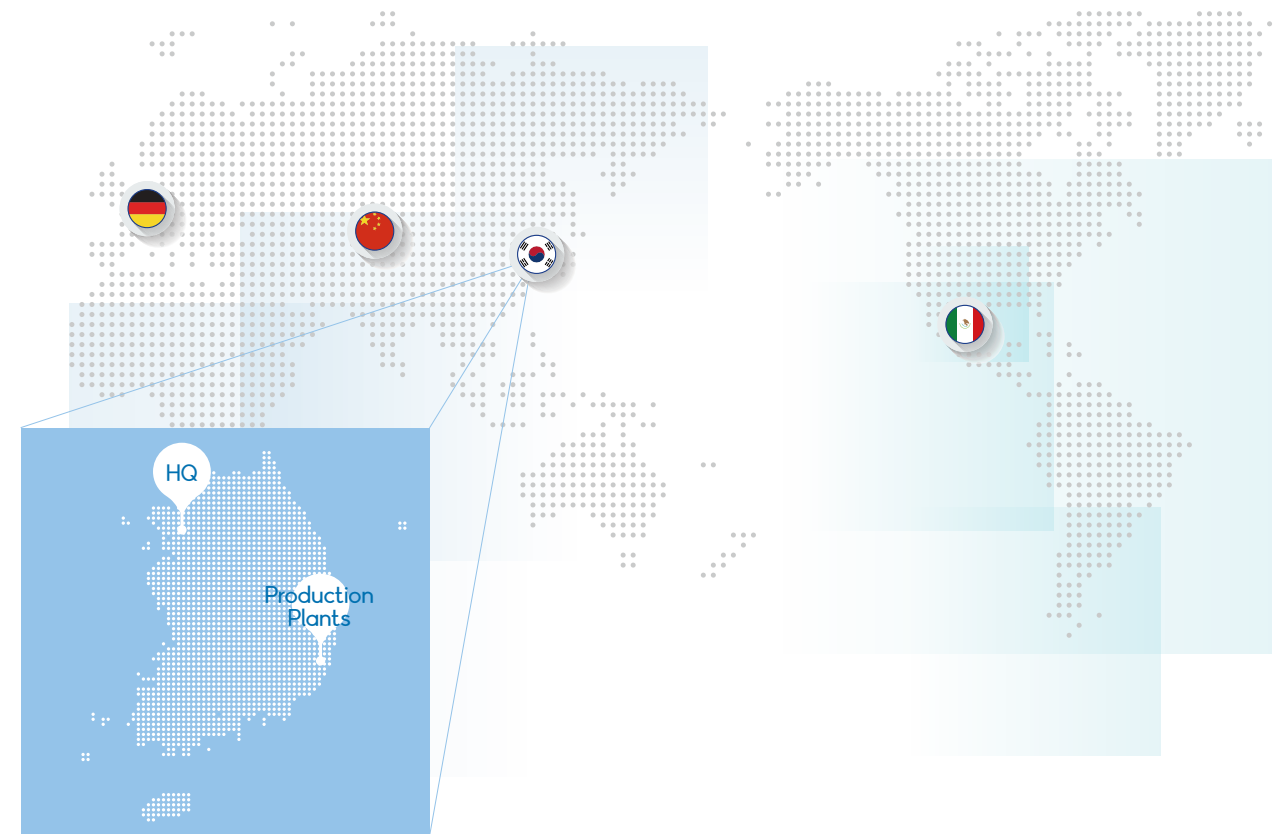


## Vision & Strategic Directions

ISU Chemical is committed to achieving the following goals: 1) evolving into a global specialty chemical company demonstrating global competitiveness in specialty chemical business; 2) developing new growth engines in bio sectors such as Red Bio and Green Bio; 3) maintaining safe and sustainable business environment to ensure "world-class safety level" by 2025; 4) embedding the culture of innovation throughout the organization to achieve our vision.



## Global Network



### Headquarters

**Korea**  
84, Sapyeong-daero, Seocho-gu, Seoul  
T 82-2-590-6600 F 82-2-590-6666

### Production Plant

**Korea (Ulsan Plant)**  
108-224, Sapyeong-ro, Nam-gu, Ulsan  
T 82-52-278-2700 F 82-52-278-2888

**Korea (Onsan Plant)**  
8, Seokdang-gil, Onsan-eup, Ulju-gun, Ulsan  
T 82-52-231-5600 F 82-52-231-5666

### Overseas Subsidiary

**Europe**  
ISU Chemical Germany GmbH  
Mergenthalerallee 77, D-65760 Eschborn, Germany  
T +49-6196-5838717 F +49-6196-5838644

**China**  
Great Orient Chemical  
11 South Binjiang Road, Taicang Port Development Zone, Jiangsu 215433, China  
T +86-512-5359-9015-7 F +86-512-5359-9019

**China**  
Shandong Dongming ISU Chemical Co., Ltd.  
GaoHai Road, Dongming Xian, Shandong Province, China 274513  
T +86-0530-731-0900 F +86-0530-731-9111

Xinjiang ISU Longkun Agricultural Development Co., Ltd  
Bayituohai Town, Yining County, Yili Prefecture, Xinjiang, China  
T +86-999-786-0266

### Overseas Office

**Latin America**  
ISU Chemical Mexico Office  
Bosque de Radiatas(Cidros) 46Bosques de las Lomas 05120 Ciudad de Mexico, CDMX.  
T +52-(55)-5570-7057 F +52-(55)-5570-4663

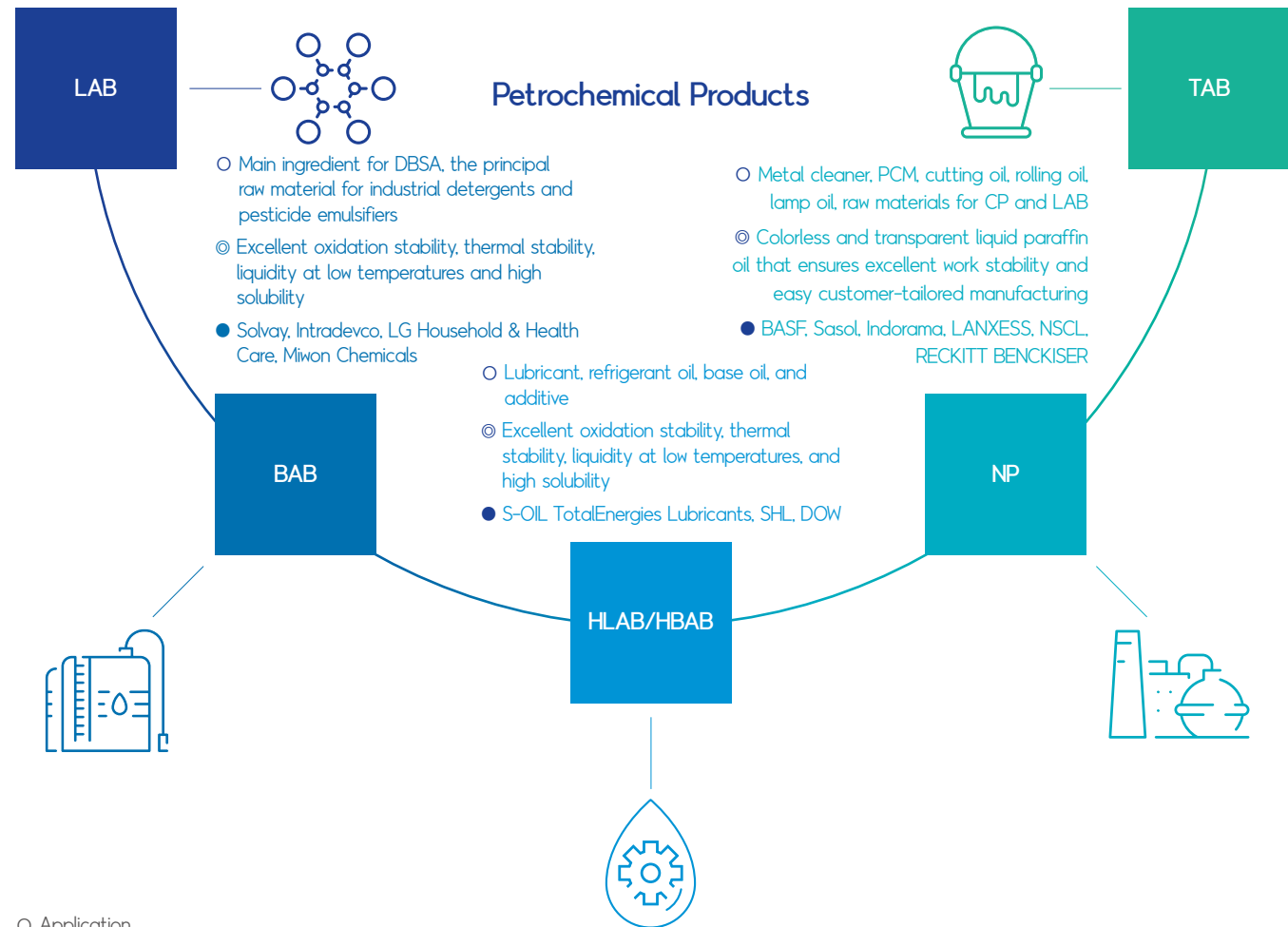
**China**  
ISU Chemical China Shanghai Office  
Rm 1001, Block A, SOHO Zhongshan Plaza, No 1055, West Zhongshan Rd, Changning District, Shanghai China 200051  
T +86-21-6278-0301 F +86-21-6178-0302



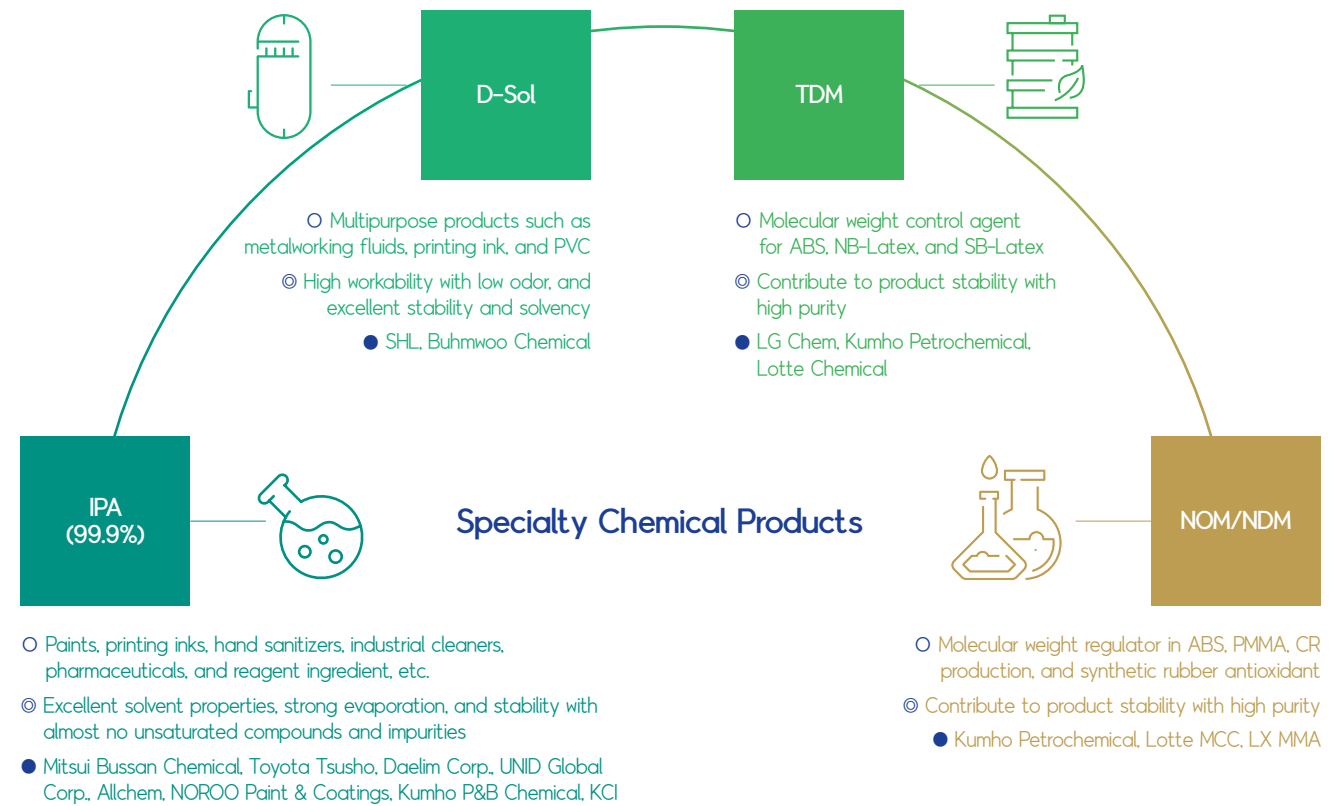
# Main Products

Since its foundation in 1969, ISU Chemical has been manufacturing and selling various petrochemical products such as LAB, NP, BAB, D-Sol, TDM, IPA, etc. based on the core value of "customer satisfaction." We will add the affluence and convenience of life through differentiated technologies and ceaseless innovation.

- Raw materials for laundry detergent
- ◎ Eco-friendly due to its excellent cleaning power and biodegradability
- Unilever, P&G, Colgate, LG Household & Health Care, AK ChemTech, Lion Korea



- Application
- ◎ Product features
- Major customers





# Milestones

ISU Chemical has grown into a global comprehensive chemical company in the petrochemical and specialty chemical sectors with continuous innovation and technical development for over 50 years. We will become a company that creates new value by pursuing constant changes.

## 1969

- 1969 Established the company (ISU Chemical Industry Co., Ltd.)
- 1973 Completed the branched alkylbenzene (BAB) plant
- 1980 Completed the linear alkylbenzene (LAB) plant
- 1987 Completed Onsan Plant
- 1988 Listed on the stock market



## 1990

- 1990 Completed the NP (Normal Paraffin) plant
- 1993 Completed the head office building and introduced TPM
- 1994 Completed the special solvent plant
- 1995 Obtained the quality management system certification (ISO 9001, KSA 9001)
- 1996 Changed company name to ISU Chemical Co., Ltd.
- 1997 Obtained the environmental management system certification (ISO 14001) and completed the TDM Plant
- 1998 Completed and operated the fine chemical plant and won the Excellent TPM Company Award



## 2000

- 2002 Obtained the occupational health and safety management system certifications (OHSAS18001, KOSHA 18001)
- 2003 Declared the Ethical Management Charter, selected as an excellent company in a new labor-management culture, and won the Korean National Quality Management Award
- 2004 Established ISU Chemical Germany GmbH and a liaison office in Mexico
- 2007 Established a representative agency in Shanghai
- 2008 Completed the IPA plant and established Great Orient Chemical Pte. Ltd. (joint venture with Indonesia Salim Group)
- 2009 Established Great Orient Chemical Taicaing Co., Ltd.



## 2010

- 2011 Established Shandong Dongming ISU Chemical Co., Ltd. (joint venture with China Dongming )
- 2012 Completed the Great Orient Chemical Taicang Co., Ltd. LAB Plant



- 2018 Established ISU Longkun Agricultural Development (joint venture with China Longkun)
- 2019 Selected as an exemplary company for the emission trading system and obtained the health and safety management system certification (ISO 45001) Completed the NOM/NDM Plant



## 2020

- 2020 Obtained the highest rating in PSM (Process Safety Management) evaluation (Onsan Plant)
- 2021 Participated in national project for all-solid-state battery raw material technology development Selected as a cooperative institution for Ulsan City's hydrogen storage technology development project

# Introduction to ISU Group

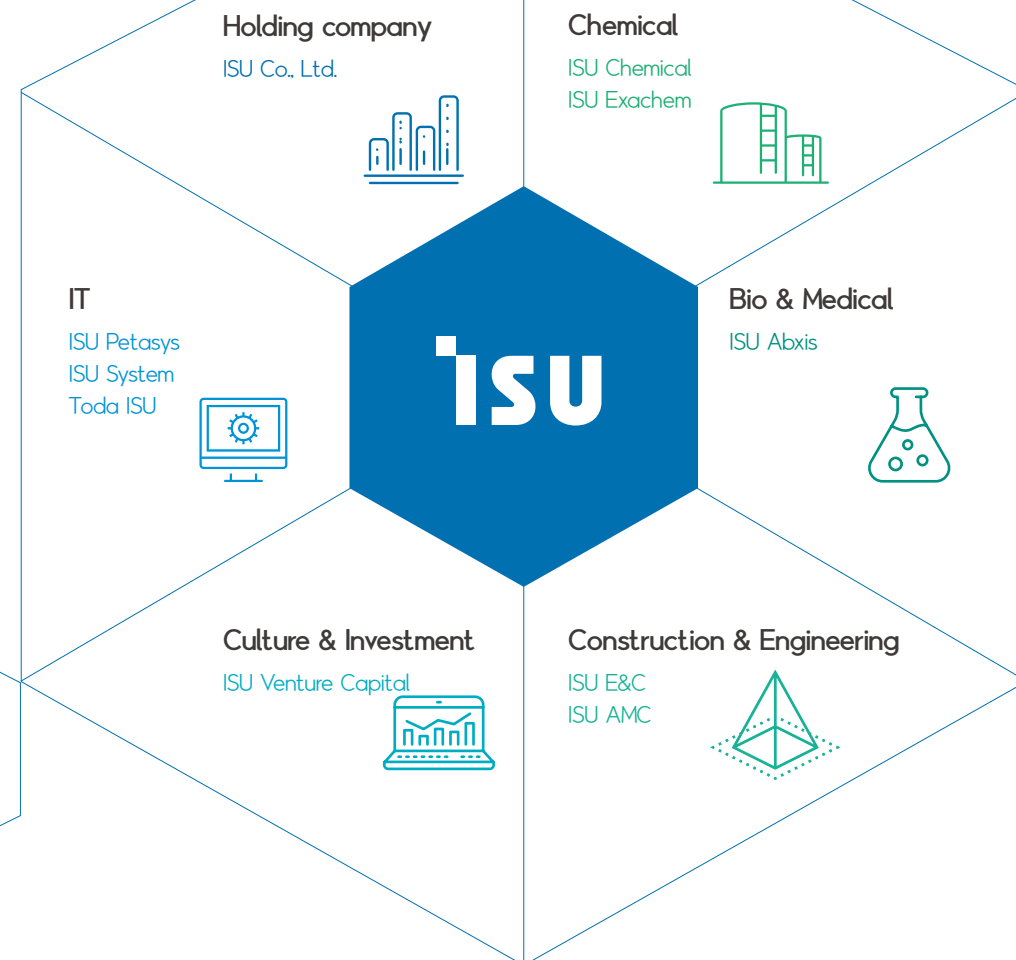
## ISU Group Overview

ISU Group launched in 1996 on the ground of ISU Chemical's success, which was founded in 1969. With the introduction of a new CI (Corporate Identity), ISU built the group management system in earnest and spearheaded business expansion and entrance into overseas markets at the group level. ISU Group has been committed to making human life abundant and convenient by producing eco-friendly detergent raw materials, supplying cutting-edge IT solutions, constructing living spaces and infrastructure such as roads and plants, and developing new medicines.

## Main Businesses

Since the establishment of ISU Chemical in 1969, ISU Group has continued to grow by diversifying its business portfolio into chemicals, IT, construction, biotechnology, culture, and investment for over 50 years. Starting as a group-based management system in 1996, ISU Group established a holding company to lay a foundation for leapfrogging into a global player with advanced corporate governance. Subsidiaries that share ISU Group's management philosophy, corporate culture, and brand demonstrate solid competitiveness in each business field and closely collaborate to create synergy. Today, ISU Group is raising its status as a global company by actively entering overseas markets through local subsidiaries and branches operating in major regions including Asia, Middle East, Africa, Europe, and the Americas.

Challenge the Future  
Share the Future



## Business Portfolio

### ISU Corporation

ISU works closely with its affiliates that share management philosophy, corporate culture, and brand, paving the way for becoming global companies.

[www.isu.co.kr](http://www.isu.co.kr)

### ISU Chemical

ISU Chemical has continuously grown through a stable supply of petrochemical products and specialty chemical products. Particularly, ISU Chemical is the only domestic producer of LAB, a raw material for laundry detergent, and NP, a raw material for LAB. As for the self-developed molecular weight controller for synthesis of polymeric resins TDM, the company is one of the world's top 3 manufacturers.

[www.isuchemical.com](http://www.isuchemical.com)

### ISU Exachem

Established in 2001, ISU Exachem is engaging in trading and distributing petrochemical products and specialty chemical products. The company supplies diverse chemical products such as TDM, D-SOL, IPA, and Base Oil both in domestic and overseas markets and conducts offer sales and stock sales related to imports and exports.

[www.isuexachem.co.kr](http://www.isuexachem.co.kr)

### ISU Abxis

Founded in 2001, ISU Abxis is a leading company in the development of biopharmaceuticals based on genetic recombination technology. In particular, as a result of concentrating on the development of orphan drugs with high growth potential, the company has become the only company in Korea that developed three kinds of biopharmaceuticals.

[www.abxis.com](http://www.abxis.com)

### ISU E&C

ISU E&C, founded in 1976, has grown into a competent general construction company by successfully completing a variety of projects in civil engineering, SOC, architecture, housing, plant, and environment fields. With differentiated design, advanced technology, precise construction, and strict quality control, ISU E&C is contributing to the development of Korean construction industry.

[const.isu.co.kr](http://const.isu.co.kr)

### ISU AMC

Founded in 2007, ISU AMC is specialized in maintenance of buildings, factories, and apartments, investment, lease, maintenance, brokerage, trading, consulting, and operation of real estate, real estate development, apartment complex maintenance, and hygiene management service businesses.

[www.isu-amc.net](http://www.isu-amc.net)

### ISU Venture Capital

Since its establishment in 2000, ISU Venture Capital has been specializing in investment in cultural contents as well as SMEs and venture firms. The company demonstrates outstanding expertise in large-scale fund management experience, industry-leading fund management performance, and professional manpower.

[www.isuvc.com](http://www.isuvc.com)

### ISU Petasys

Established in 1972, ISU Petasys has specialized in supplying PCBs since 1989, growing together with the IT industry. The company increased business competitiveness by expanding the investment in R&D as well as in production facilities, after joining as a new member of the ISU Group in 1995.

[www.petasys.com](http://www.petasys.com)

### ISU System

ISU System, launched in 1996, is a specialized IT service and solution provider. Based on differentiated technology, unique know-how, and rich experience, the company provides optimized IT services to manufacturing, construction, finance, distribution, public service sectors and so on.

[www.isusystem.com](http://www.isusystem.com)

### TODA ISU

TODA ISU is a joint venture established in February 2008, set up by each 50% funding from ISU Holdings and Japan's TODA KOGYO Corporation. TODA ISU produces magnetic materials and electronic components in various industry and supplies key components to leading companies.

[www.todaisu.co.kr](http://www.todaisu.co.kr)



# ESG MANAGEMENT

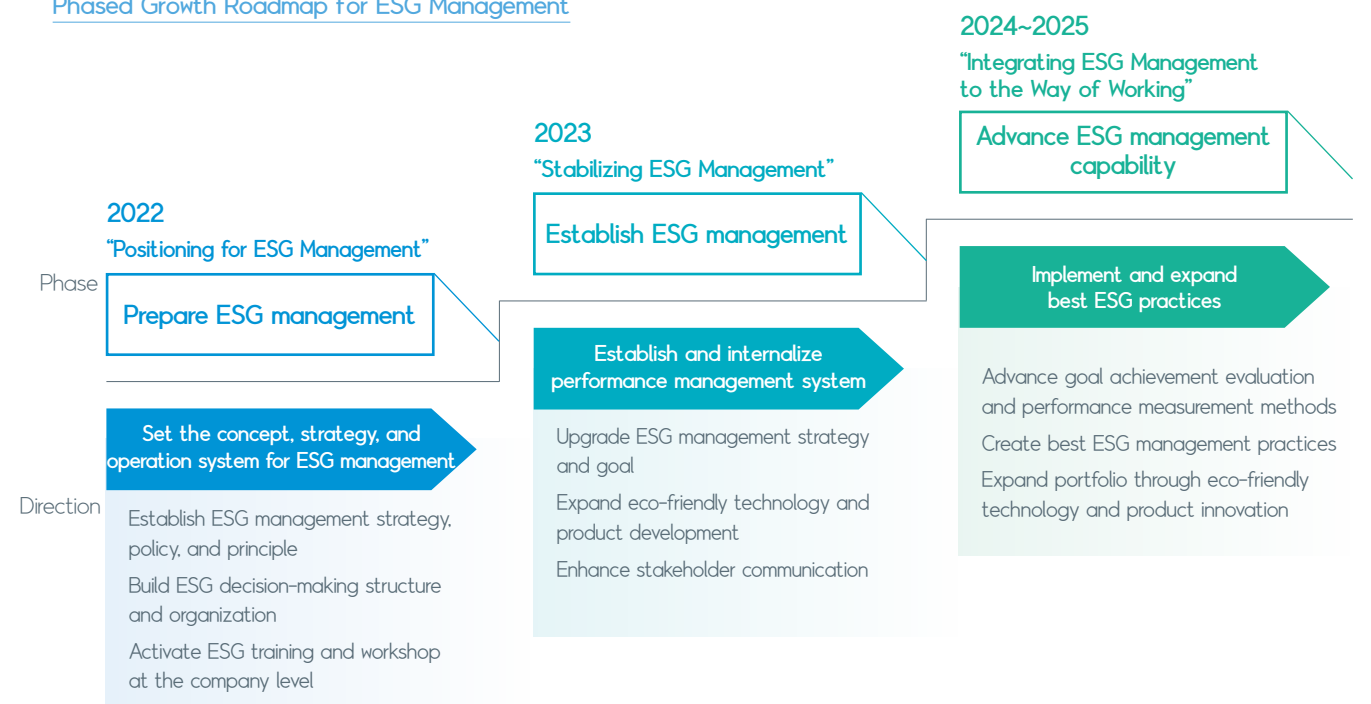
- 19 ESG Management Strategy
- 22 Special Section: Sustainable Innovation
- 26 Materiality Assessment



## ESG Management Strategy

Starting ESG management in 2022 in earnest, ISU Chemical established a mid- and long-term strategy, roadmap, and governance system aimed at embedding ESG management across the company by 2030. The introduction of ESG management represents our commitment to strengthening fundamental competitiveness for healthy growth for the next 50 or 100 years based on the history and know-how that ISU Chemical has accumulated over the past 50 years. In order to survive in the era of paradigm shift towards stakeholder capitalism, it is essential to respond to changes in environmental and social megatrends and to continuously communicate with stakeholders. In response, ISU Chemical will actively implement ESG management strategies step by step to firmly establish a foothold for sustainable growth.

### Phased Growth Roadmap for ESG Management



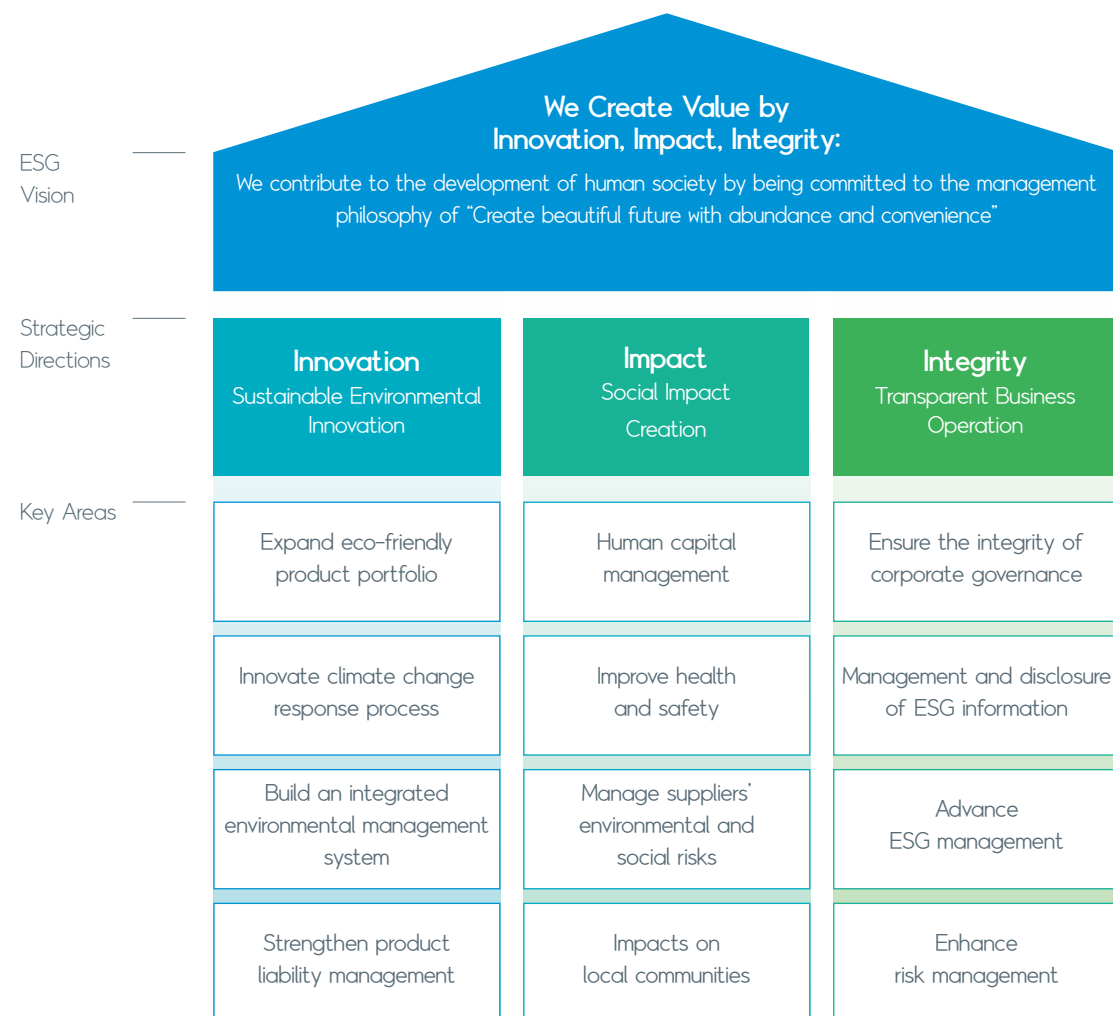


## ESG Management Vision and Mission

ISU Chemical established an ESG management promotion strategy in 2021 to efficiently manage various ESG-related issues in business operation process in rapidly-changing global business environment. Starting ESG management in 2022, we plan to identify and manage environmental and social risk factors in advance and create new business value from the ESG management perspective.

To this end, we set 3I (Innovation, Impact, and Integrity) as the strategic direction for ESG management and identified 12 key areas and major tasks. Particularly, the company will focus on the following seven key tasks: development and management of eco-friendly products, establishment of carbon reduction strategies and goals, regular SHE (Safety, Health, Environment) risk diagnosis at worksites, internalization of workplace safety culture, ESG information management and communication, establishment and operation of ESG management governance, and ESG management training. Our mid- to long-term ESG management strategy and policy will also be upgraded step by step.

### 2030 3I (Innovation, Impact, and Integrity) Strategy



## ESG Management Operation System

### ESG Management Committee

To promote ESG management in earnest, ISU Chemical has organized the ESG management governance. The ESG Management Committee chaired by the CEO was launched to help the management review and make decisions on company-wide ESG issues. The committee will fulfill its role as a decision-making body aimed at enhancing ESG-based corporate value by reviewing and deliberating ESG management strategy and implementation tasks, disclosure on ESG Report and non-financial report, and environmental and social issues. In addition, major ESG management issues are reported to the Board of Directors.

### ESG Management Promotion Organization

In order to promote ESG management more systematically, ISU Chemical launched the ESG management part under the Planning Department. Major roles of the ESG management part include discovering ESG management tasks, forming a consensus among employees, establishing ESG management strategy and monitoring the implementation, managing and disclosing ESG information, coordinating inter-department cooperation for ESG tasks implementation, and analyzing ESG trends. Going forward, ISU Chemical will continue to promote ESG management at the company level.

### ESG Management Governance



### Internalization of ESG Management

ISU Chemical has provided employees with ESG management training at the company level in the second half of 2021 and the first half of 2022 with the aim of raising their awareness of ESG management. We plan to design customized training by issue, department, and position and implement diverse programs and activities to internalize ESG management into the company.



Special  
Section

# Sustainable Innovation

## ISU's promise for a sustainable future

The United Nations, which adopted the 2030 Agenda for Sustainable Development aimed at delivering a better future for humanity in 2015, is calling on the implementation of specific actions in each category. To keep abreast of the changes in global trends, businesses across the world are reshaping their portfolio and seeking opportunities to explore new markets.

Clearly recognizing the changing global trend, ISU Chemical is shifting the company-wide capabilities from the existing detergent-based material business to the next-generation growth industry such as battery materials, hydrogen, and innovative products in agriculture.

Lithium  
Sulfide
$$\text{Li}_2\text{S}$$

### Lithium sulfide ( $\text{Li}_2\text{S}$ ), the future of mobility ISU Chemical delivers

According to the global market research agency IDTechEx, the market of all-solid-state battery, which comes with solid instead of the existing liquid electrolyte, will be valued at KRW 9.4 trillion or more by 2031. Featuring a low danger of explosion and high energy density, sulfide all-solid-state batteries will see the demand for the vehicle and transportation industry surge after 2025.

ISU Chemical possesses the expertise in handling  $\text{H}_2\text{S}$  over the past 30 years based on the production experience of molecular weight controller of polymeric resins TDM, developing  $\text{Li}_2\text{S}$  which is the key material for sulfide all-solid-state battery. Our goal is to accelerate the commercialization of  $\text{Li}_2\text{S}$  by working with global companies like Samsung SDI and Hyundai Motor Company. To that end, we are currently constructing a demonstration plant worth KRW 21 billion which will begin operation by the end of 2022 for the first time in Korea.



Hydrogen

# LOHC

### The future of hydrogen led by ISU: LOHC & H2 Summit

McKinsey, the global consultancy, expects that by 2050, hydrogen will account for 18% of the global energy demand while the hydrogen market will be estimated at KRW 3,000 trillion. Therefore, the necessity is growing for the safe storage technology of hydrogen which is emerging as a sustainable future energy. In particular, around 40%, or USD 16 billion of the USD 40 billion to be invested into hydrogen industry by 2030 is concentrated on transportation.

In April 2021, ISU Chemical was selected as one of the partners for specialty chemical technology cooperation project by the Ulsan Metropolitan City and Korea Research Institute of Chemical Technology. As part of the project, ISU Chemical is currently developing new materials to preempt technology of Liquid Organic Hydrogen Carrier, or LOHC, which is a promising material for storage and transportation through hydrogenation and dehydrogenation. Capable of storing and transporting large volume of hydrogen in a safe and economical manner, LOHC is expected to increase the availability of green hydrogen in the future. Also, after joining the group of hydrogen businesses 'Korea H2 Business Summit' as a full-time member company in September 2021, ISU Chemical is positioning itself as a company in the top 1% out of the 2,356 listed businesses of the hydrogen industry.

### The future agriculture that ISU Chemical aspires

In 2021, the USDA (United States Department of Agriculture) anticipated that food security would likely emerge as a critical issue over the next decade due to the growing global demand for produce and the instability in the trade system. According to the global market research firm MarketsandMarkets in 2020, smart farm will grow by over 12% a year in highly populated countries such as China and India. The Commercializations Promotion Agency for R&D Outcomes (COMPA) estimates the local smart farm industry in 2022 at KRW 6 trillion.

In a bid to keep up with the changing trends of food tech, ISU Chemical launched Greenbio Business Division in 2017. The first project was the construction of a 5-hectar smart farm plant in Xinjiang province, China in April 2018. The 1st-phase business model is now running across the value chain from greenhouse construction, education, production, and export to IoT. The second phase will soon begin on Data farming, plant factory, and functional crop through R&D with external research institute in 2022 and independent facility investment.

Future agriculture

# Smart Farm

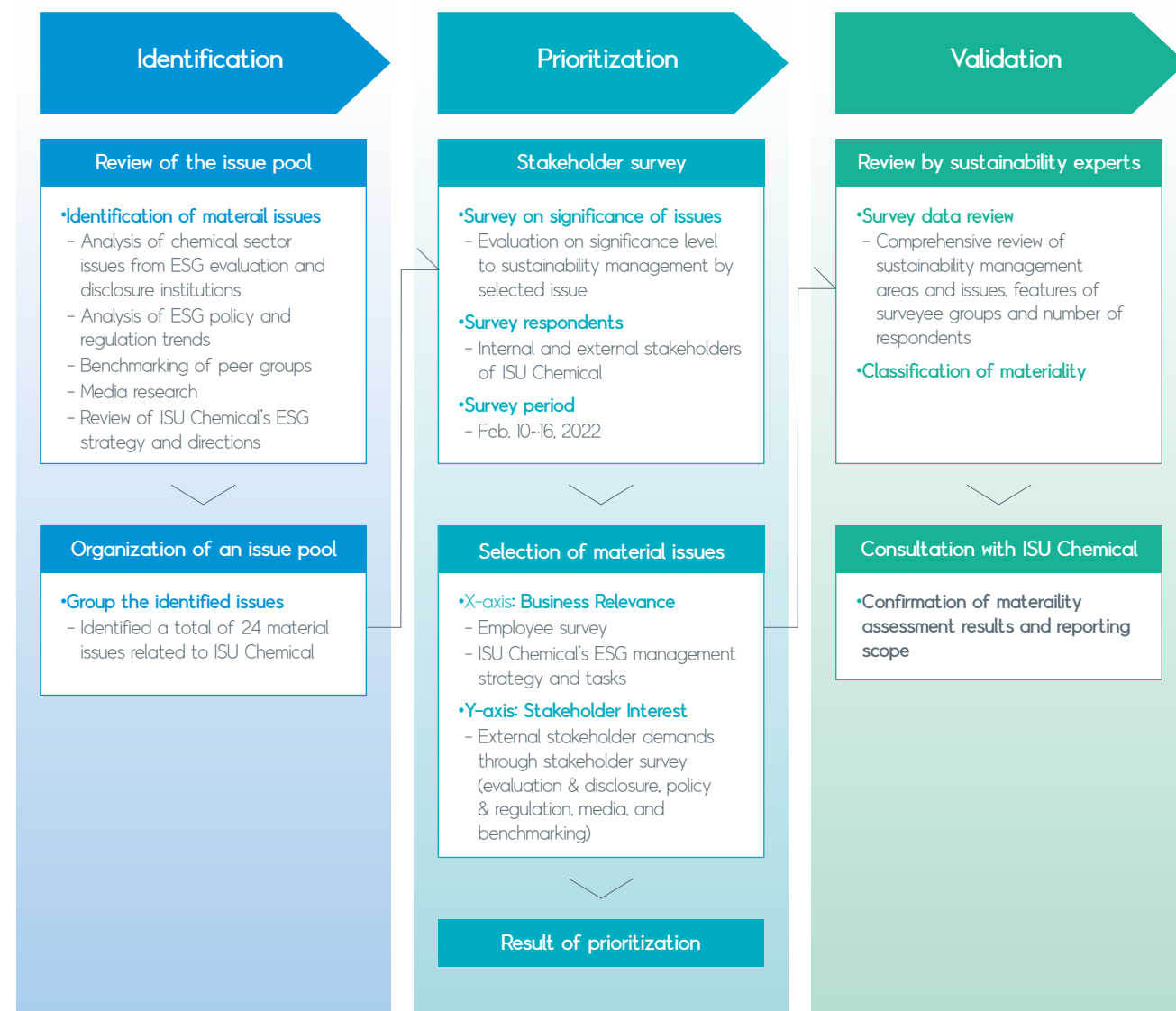


# Materiality Assessment

ISU Chemical has identified issues to be managed from the perspective of business risks and opportunities through ESG materiality assessment.

ISU Chemical has conducted the materiality assessment in accordance with the materiality principle as well as the double materiality concept of the GRI Standards, a global sustainability reporting guideline. In addition, in order to clearly understand the requirements of internal and external stakeholders, we collected and reviewed ESG management issues of each department from a company-wide perspective and conducted an in-depth analysis of domestic and overseas ESG regulations, policies, and initiatives.

## Materiality Assessment Process



## Materiality Matrix

Stakeholder Interest



○ Core Issue

E	2	Development of green products and businesses	S	1	Safety and environmental risk management at worksites	G	6	Responsible governance
	3	GHG reduction management		4	Recruitment and cultivation of talent		8	Expansion of R&D management
	5	Enhancement of handling and managing hazardous substances		7	Human rights management		9	Enhancement of ESG performance disclosure and communication
	10	Energy use management		12	Development of organizational culture		11	Enhancement of compliance
	13	Reduction of waste generation at worksites		15	Guarantee of equal opportunity		14	Ethical management
	20	Expansion of recyclable materials use		16	Supply chain responsibility management		18	Digital innovation
	22	Biodiversity		17	Impact on local communities		21	Creation of economic performance
	23	Water management		19	Customer satisfaction management			
				24	Diversity & inclusion management			



## Management Plan for Core Issues

Core issues	Management plan	Major stakeholders						Business impact		Activities of ISU Chemical (Strategic tasks for ESG management) GRI Mapping
		Gov./Regulation	Shareholder / Investor	Customers	Employees	Suppliers	Local communities	Risk management	Opportunity creation	
① Safety and environmental risk management at worksites	With the enactment of the Serious Accidents Punishment Act and the impact of the COVID-19 pandemic, interest in health and safety management is greater than ever. In response, ISU Chemical has been strengthening SHE (Safety, Health, Environment) management activities with the goal of "Zero Safety Accident."	●			●	●		●		<ul style="list-style-type: none"> <li>Regular diagnosis on and reduction of SHE risks at worksites</li> <li>GRI 403</li> </ul>
② Development of eco-friendly products and businesses	As requirements on green products and businesses from clients and consumers are intensifying, related markets are also expanding. ISU Chemical is focusing on developing green products and expanding M&A and investments in ESG sectors.		●	●				●		<ul style="list-style-type: none"> <li>Eco-friendly products management</li> <li>Development of new eco-friendly projects</li> <li>Establishment of ESG-related investment and M&amp;A process</li> <li>Non GRI</li> </ul>
③ GHG reduction management ⑩ Energy use management	Efforts for carbon neutral are underway at global, national, and corporate levels in accordance with the 2015 Paris Agreement. ISU Chemical actively supports carbon-neutral activities driven by the government and industry and is seeking specific implementation plans at the company level.	●						●	●	<ul style="list-style-type: none"> <li>Establishment of carbon emissions reduction strategy and goal</li> <li>Advancement of GHG inventory</li> <li>Seeking of GHG reduction measures</li> <li>Analysis of climate change risk impacts</li> <li>GRI 302, 305</li> </ul>
④ Recruitment and cultivation of talent	Efficient human capital acquisition and operation is an important factor directly linked to a company's potential competitive advantage. ISU Chemical plans to expand activities for competitive human capital management through recruitment of talents as well as continuous training to support their growth.		●		●				●	<ul style="list-style-type: none"> <li>Establishment and execution of core talent recruitment and management strategy</li> <li>GRI 401, 404</li> </ul>
⑤ Enhancement of handling and managing hazardous substances	Chemical companies should thoroughly manage and reduce hazardous substances. ISU Chemical will build a strict chemical substance control system that goes beyond simply responding to regulations.	●					●	●		<ul style="list-style-type: none"> <li>Enhancement of substance management system related to domestic and foreign environmental regulations</li> <li>Non GRI</li> </ul>
⑥ Responsible governance	Healthy and transparent corporate governance is the basis for sustainable business operations and long-term value creation. ISU Chemical will establish a roadmap for promoting responsible governance and advance it step-by-step.		●		●			●		<ul style="list-style-type: none"> <li>Establishment and operation of ESG management operation system and governance</li> <li>GRI 102</li> </ul>
⑦ Human rights management	With the enactment of laws for due diligence on sustainability practice in the supply chains around the world, it has become essential to implement human rights management for worksites and business partners. ISU Chemical has been implementing human rights management that meets global standards.				●	●	●	●		<ul style="list-style-type: none"> <li>Enhancement of human rights policy and execution of human rights management</li> <li>GRI 412</li> </ul>
⑧ Expansion of R&D management	R&D management is becoming a new driving force for process efficiency improvement, business discovery, and differentiation from other companies. ISU Chemical is creating high added values and leading the future of chemical industry through R&D management.			●		●			●	<ul style="list-style-type: none"> <li>Discovery and development of new growth engines and high value-added businesses</li> <li>Non GRI</li> </ul>
⑨ Enhancement of ESG performance disclosure and communication	Stakeholders including the government, investors, and customers are demanding transparent information disclosure on ESG management. ISU Chemical will continue to expand stakeholder communication through systematic ESG information management and upgrade ESG management based on data-driven analysis.	●	●	●				●	●	<ul style="list-style-type: none"> <li>ESG information management and communication</li> <li>Initiatives in ESG focus areas</li> <li>Non GRI</li> </ul>



# ESG PERFORMANCE

- 32 **Strategic Direction 1 - Innovation**  
Sustainable Environmental Innovation
- 38 **Strategic Direction 2 - Impact**  
Social Impact Creation
- 54 **Strategic Direction 3 - Integrity**  
Transparent Business Operation

## ISU Chemical and UN Sustainable Development Goals

The Sustainable Development Goals (SDGs) are a collection of 17 interlinked global goals designed to be a blueprint to achieve a better and more sustainable future for all people and the world by 2030. ISU Chemical proactively carries out a variety of activities linked to ESG management and targets of SDGs. We will perform business for the purpose of contributing to the sustainable development of the global community.





## Strategic Direction 1

## Innovation: Sustainable Environmental Innovation

I-1  
Response to  
Climate Change

Annual GHG reduction  
through the use of by-  
product hydrogen

 A small icon showing a cloud with 'CO2' and two downward arrows.
 

26,000 tCO<sub>2</sub>-eq

In line with the international community's efforts to achieve carbon neutrality by 2050, Korea has set 2030 Nationally Determined Contributions (NDCs) to reduce GHG more than 40% compared to the 2018 level. ISU Chemical carries out a wide array of GHG reduction activities aimed at helping the government reduce GHG emissions and minimizing our impact on climate change. To that end, ISU Chemical is announcing mid- and long-term carbon reduction goals and vision this year which will also lay out new strategies. We will seek long-term carbon reduction strategies by integrating Scope3 emissions into our new strategies to live up to the demand from global customers. ISU Chemical pursues sustainable growth while taking aggressive action on climate change.

## GHG and Energy Management

ISU Chemical manages energy consumption data through ERP system (SAP). We set annual energy and cost reduction targets for each worksite and carry out Remind TOP activities throughout the company.

We have retrofitted all plants and HQ with LED lighting system. We are also discussing the installation of solar panels in the plants and the parking lot. In addition, since 2016, we have implemented the GHG reduction project 'Replacing hydrogen production process by utilizing by-product hydrogen,' which reduces 26,000 tCO<sub>2</sub>-eq of GHG on an annual basis. As a result, the government has recognized our GHG reduction methodology for the first time in the chemical industry. Also, we obtained an additional Certified Emission Reduction (CER) of 130,000 tCO<sub>2</sub>-eq for the third period from 2021 to 2025.

In addition, ISU Chemical was able to save energy consumption after installing NP Plant heat exchange system and PACKINOX exchanger. ISU Chemical will participate in achieving the carbon neutrality target by reviewing the application of Carbon Capture, Utilization and Storage (CCUS) technology and researching H<sub>2</sub> energy utilization methods.

## Analysis of Impacts of Climate Change Risk

Recognizing the climate crisis as a major management issue, ISU Chemical is actively responding to global climate problems. For instance, we participate in 'Energy Saving Partnership' to share methods and ideas on saving energy consumption with other businesses and to form close network on a regular basis. The Planning & Coordination Team holds regular training sessions on climate crisis to ensure that our employees are keenly aware of climate change at all time. We also monitor latest trends and each stakeholder's needs on a regular basis. ISU Chemical will categorize climate issues into three types - regulatory, environmental, and financial and announce countermeasures. The climate response strategies established through this process will be shared with the ESG Management Committee, which will then come up with carbon neutrality growth strategy according to the decision made by the Management Committee.

I-2  
R&D Management

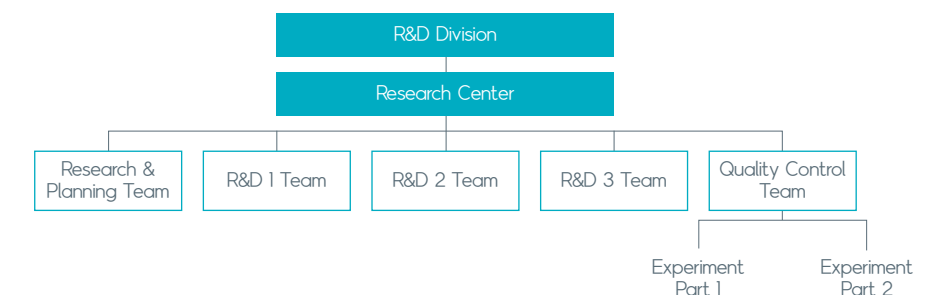
It is the most important for corporate survival and sustainability to secure unique core technological competence that sets it apart from other companies. ISU Chemical is not only developing core technologies on its own through ceaseless R&D activities, but also supplying products that the market and customers need by capitalizing on the secured core technologies. We will continue and expand R&D investment to become a leader with global technological competitiveness.

## R&amp;D Performance and Outcome

ISU Chemical commercialized high value-added chemicals such as molecular weight controller of polymeric resins (TDM) and synthetic rubber antioxidants such as NOM and NDM by utilizing major by-product H<sub>2</sub>S with its proprietary technology. We are completing the construction of the demonstration plant this year by researching Li<sub>2</sub>S, the core raw material for the next-generation all-solid-state battery to secure the lead in the zero-carbon market and expand the product portfolio. We are also researching LOHC, high-density hydrogen storage and carrier technology, to prepare for the hydrogen energy era. We are producing IPA which is the raw material for hand sanitizer and industrial cleaner and completed the development of NMP for the first time in Korea which is used for semi-conductors and lithium-ion batteries, and EEP as a solvent for electronic materials.

## R&amp;D Organization

The R&D Division consists of 64 employees at Research & Planning Team, R&D 1, 2, and 3 Team, and Quality Control Team. The R&D organization started with 13 researchers with master's and doctor's degrees in 1990 and has grown into an organization of 36 researchers at Research & Planning Team and R&D 1, 2, and 3 Team. Research & Planning Team strives to explore new sustainable growth engine and develop high value-added business. R&D Team optimizes existing processes and commercialization study through reforming and new business development using by-products. Quality Control Team, located in Ulsan Plant and Onsan Plant with 28 employees, conducts tasks such as reliable analysis of process and products and analysis support for new items for commercialization.





## I-3 Integrated Environmental Management

Amid the increasingly stringent environmental regulations across the globe, it is critical for businesses to not only manage risks but also establish a pre-emptive environmental management system. ISU Chemical manages water resources, waste, and air and soil pollution through the environmental management system (EMS).

### Environmental Management System

#### ✓ Response to Environmental Regulations and Investment

ISU Chemical complies with environmental regulations as we carry out activities to reduce SOx, NOx and fine dust, by stage, through Total Air Pollution Load Management System. Also, we make a continuous and systemic investment into establishing odor monitoring system for air improvement, odor management, and hazardous chemical materials management. We set up a long-term investment plan for complying with the management standards of hazardous materials and preventing safety accidents. Moreover, we invest in concrete floor paving in the storage facilities to prevent soil pollution and lay surface pipelines. At ISU Chemical, employees will strive to develop into an eco-friendly company through preemptive investment to respond to environmental regulations and to enhance manufacturing competitiveness.

#### ✓ ISO 14001 Certificate Management

All plants of ISU Chemical have been certified for ISO 14001. We conduct an environmental impact assessment and regulatory compliance monitoring, thus identifying risks related to environment management and address risk factors. Environmental management results are shared with the management on a yearly basis. We improve the system by reflecting the management philosophy on the environmental operation while undergoing a conformity assessment of our environmental management system by an external organization.

### Water Resource Management

#### ✓ Wastewater Treatment

Wastewater generated over our production process is first physically and chemically treated before being fed into the terminal treatment plant. To minimize water pollution, we operate API oil separator to remove oily pollutants from rainwater in production facilities. We also monitor wastewater discharge status and analyze wastewater on a constant basis. ISU Chemical manages water pollution by effectively controlling wastewater generated at our plants and taking measures against environmental problems. Also, by installing the blocking facilities at the terminal discharge point, we make sure that wastewater is not leaked into the environment.

#### ✓ Activities to Reduce Water Consumption

The petrochemical production process uses pure water without any minerals or organic components to ensure purity and improve productivity. Thus, it is inevitable to use a large quantity of water to produce pure water. To address this issue, ISU Chemical Onsan Plant introduced the R/O (Reverse Osmosis) technology which selectively filters specific ingredients and separates mixtures to reduce water consumption and increase the amount of reused wastewater. Moreover, we carry out activities to reduce discharged wastewater and water influx to ensure efficiency in water resource management, we recycle steam condensate, which is normally discharged, by determining its contamination level and applying appropriate treatment. ISU Chemical strives to save, reuse, and recycle water resources as we believe that environmental preservation and management begins with a thorough water resources management.

### Waste Management

#### ✓ Waste Reuse and Disposal

Disposing of waste by incineration or landfill may result in secondary environmental loads such as ash, leachate, or greenhouse gas. ISU Chemical does not believe that those practices are viable for sustainable societies in the 21st century. Thus, we conducted the LCA (Life Cycle Assessment) on waste to minimize the secondary environmental load when disposing of waste. This has allowed us to identify the sources of waste and reuse the waste which otherwise would have ended up in incineration or landfill. Waste we generate is disposed of by the contracted companies which have licenses for disposal and transportation from the Ministry of Environment. We keep the record of transportation, disposal, and treatment of waste discharged through the 'Waste All-baro System'. We carry out site inspections by visiting the contracted disposal company on a yearly basis to confirm whether they comply with regulations and conduct integrity assessments.

#### ✓ Waste Management and Storage

To legally dispose of waste and identify the impacts of waste on the surrounding environment, ISU Chemical partners with external companies specializing in waste analysis and shares waste analysis results with commissioned companies. Generated waste is stored in waste storage facilities before finally being sent to external companies. We take thorough measures to prevent environmental pollution by separately storing waste and installing impermeable floor materials.





## Management of Air and Soil Pollution

### ✓ Air Pollutants Emissions Control

ISU Chemical carries out stringent environmental protection activities to comply with laws and prevent air pollutants at worksites. We also treat hydrocarbon, VOCs, and odor materials in facilities like waste gas incinerators or absorption towers. Also, we manage leakage pollution of environmental pollutants 24/7 by installing Telemetering System(TMS) and CCTVs on stacks. In order to improve air environment, in particular, ISU Chemical has converted fuel into eco-friendly fuel at Ulsan and Onsan plants. We manage air pollutants according to a set of internal regulations which are far more stringent than are legally required. We also manage air pollutants and odor through VOCs inventory, VCU, waste gas incinerators, and absorption towers and reduce nitrogen oxide through establishment of NOx burner and by-product hydrogen purchase. The surplus volume from Total Nitrogen oxide Permissible Emission Volume are transferred to neighboring businesses as we put our ESG management philosophy into action.

• Vapor Combustion Unit

### ✓ Establishment Of Air Pollutants (NOx, SOx) and Odor Monitoring System

ISU Chemical Ulsan and Onsan Plants established the TMS system to monitor major air pollutants such as NOx and SOx in real-time. In 2022, ISU Chemical set up an odor monitoring system at Onsan Plant to control odor in a scientific and systemic manner.

### ✓ Soil Pollution Control

ISU Chemical manages facilities causing soil pollution in a systematic and efficient manner. We have also established and implemented rules and guidelines to better manage soil purification when soil contamination is identified. The floor of tank area with a high risk for soil pollution is paved with impermeable concrete. In addition, we conduct soil pollution assessments with an external agency on a regular basis to assess the impacts of the soil around our plants.



## 1-4 Product Liability and Hazardous Substance Control

ISU Chemical strives to enhance control of chemical substances and prevent accidents by complying with laws such as Act on the Registration and evaluation, etc. of Chemical Substances and Chemical Substances Control Act.

### ✓ Chemical Substance and Hazardous Substance Control

ISU Chemical signed the "Support Agreement for Disaster and Chemical Accidents" with the fire department and local fire stations to respond to accidents by hazardous substance. Under this agreement, we mutually exchange staff and equipment and share skills and knowledge to protect people from chemical accidents or disasters.

ISU Chemical conducts inspections on the storage and management of chemical substances on a yearly basis. We share information such as the list of hazardous chemical substances, evacuation sites, and emergency plans with local communities every year. ISU Chemical Plants located in National Industry Complex of Onsan and Ulsan City run business councils in the complex to share information on environmental protection. For waste disposed of in incineration facilities or landfills, in particular, we set up mid- and long-term improvement plans and changed the disposal method to reuse and recycle thus improving the environment in the area.

### REACH

ISU Chemical observes EU ECHA's "SVHC Roadmap 2020." Under this road map, we monitor CMRs\* substances as well as PBTs\*\*, vPvBs\*\*\* or EDs\*\*\*\* among 223 SVHC candidate substances. We also monitor 6 substances including LAB which is handled by ISU Chemical Germany GmbH and two substances including IPA and communicate with the consortium. ISU Chemical shares information on regulation monitoring on chemical substances in countries like Turkey, Australia, and Vietnam, and responds not only to the needs of stakeholders but also to requests for material information from overseas importers.

\* Carcinogenicity, Mutagenicity, Reproductive toxicity

\*\* Persistent, Bioaccumulative and Tox

\*\*\* Very Persistent and Very Bioaccumulative substances

\*\*\*\* Endocrine disruptors

\*\*\*\*\* LAB, Hvy-LAB, NP C10-13, NP C14-17, LAS, TDM, Tetradecane, Propal-2-ol

### Responsible Care

'Responsible Care' is ISU Chemical's global voluntary initiative aimed at preventing environmental pollution and safety accident by controlling hazardous and dangerous substances used in the chemical industry. It also seeks to protect the health of local communities and workers and keep communities clean. ISU Chemical strives to continue its efforts with Responsible Care and improve its performance regarding environment, health, safety, and security.



## Strategic Direction 2

## Impact: Social Impact Creation

2-1  
Respect for  
Human Rights  
and Diversity

Legislation around human rights is accelerating around the world, and the importance of corporate social values and responsibilities is growing. ISU Chemical is committed to respecting the human rights of various stakeholders as well as employees by practicing human rights management.

## Human Rights Policy

ISU Chemical has declared human rights management for employees and stakeholders and established human rights management policies. Our human rights management policies are based on the UN Universal Declaration of Human Rights, UN Guiding Principles on Business and Human Rights, and key agreements of the International Labor Organization.

ISU Chemical operates according to human rights policies based on the internal ethics guidelines within the ethical management charter. The charter highlights equal opportunities and treatment of all employees, reasonable rewards, and a clean and safe workplace. We recommend our affiliates observe the policies to ensure that human rights violations are prevented in the supply chain.

## Monitoring of Human Rights Management

ISU Chemical ensures that human rights violation is resolved swiftly through a whistle-blowing channel. We will implement a variety of programs to identify and prevent issues related to human rights by analyzing potential risks for our employees and affiliates.

## Expansion of Diversity and Inclusiveness

ISU Chemical hires people with disabilities to create jobs for the socially disadvantaged, and ensures that there is no discrimination during the hiring process. In addition to direct employment of the persons with disabilities, ISU Chemical strives to create jobs for the socially disadvantaged by purchasing goods from facilities for persons with disabilities\*, certified by the government. Furthermore, ISU Chemical carries out programs designed to reinforce employee diversity.

\* Facilities for persons with disabilities are those facilities certified by the Ministry of Employment and Labor and meet certain requirements such as the number of employees with disabilities, employment ratio, and wages for employees with disabilities.

## Work-Life Balance

ISU Chemical operates various programs to ensure work-life balance such as pre- and post-parental leave, childcare leave, family care leave, and subfertility treatment leave. ISU Chemical also holds a Family Day where employees invite family members to the workplace for family unity.

## Employee Communication Improvement Programs

ISU Chemical is making a great effort to find better ways to enhance internal communication and employee satisfaction. In order to create more friendly working environment as well as horizontal work culture, ISU Chemical holds a two-day workshop to help employees better communicate with one another regardless of gender, age, and position. Although this program has been suspended temporarily since 2020 due to Covid-19, similar programs are expected to be launched.

## &lt; Human Rights Policy &gt;

## 1. Overview

ISU Chemical actively takes the lead in protecting the human rights of not only employees, but also partners, local communities and customers, and strives for social value realization and sustainable development. We are realizing human rights management based on policies such as the UN Universal Declaration of Human Rights, International Labor Organization (ILO), and the OECD Due Diligence Guidance for Responsible Business Conduct.

## 2. Operational Guidelines

- ① **Respect for human rights:** We respect all employees as humans and systematically monitor potential human rights risks to prevent any compromises on human rights.
- ② **Compliance with working conditions:** We comply with the legal work hours based on the Constitution and the Labor Relations Act.
- ③ **Ensuring equal opportunity and treatment:** We respect the will of employees and operate an equivalent education and training system and HR system that does not discriminate in hiring, promoting, or educating based on gender, academic background, region of origin, religion, race, nationality, physical disability, etc.
- ④ **Health and safety:** We strive to prevent safety accidents by continuously strengthening the health and safety system, and by providing a safe working environment for workers by complying with international standards, related laws, and internal regulations for the working environment.
- ⑤ **Prohibition of child labor:** We do not employ minors under the age of 15, and in the case of children under the age of 18, we must comply with Labor Standards Act and prevent them from engaging in dangerous or harmful work.
- ⑥ **Prohibition of forced labor:** We do not force labor against an employee's free will through mental or physical oppression.
- ⑦ **Protection of human rights of local residents:** We contribute to improving the quality of life of local residents by supporting the economic, social and cultural development of the local community.
- ⑧ **Protection of human rights of customers:** We protect customers' physical, intellectual property and honor as the company's property, and take the best measures to protect the customer's personal information.
- ⑨ **Information protection:** We do not divulge or use the personal information of all stakeholders without prior approval or use it for other purposes, and we continuously inspect and manage personal information to prevent leakage to the outside.



## 2-2 Human Capital Management

It is very important to strategically utilize human resources, the source of knowledge and value creation, in business activities. ISU Chemical recognizes human capital as a core driving force for corporate growth, thus making a concerted effort to effectively manage human capital.

### ISU Chemical's HR Philosophy

ISU Chemical improves management performance through talent training and enhances competitiveness to rise as a world-class corporate. To that end, we will nurture professionals who create new knowledge and values, produce key talents in the era of global and digital, reinforce the competency of organizations and individuals, and establish self-directed learning culture.

#### HR Philosophy

Nurture professionals who create new knowledge and values through core values (Sincerity, Seek for world best, and Customer satisfaction)

#### Communication



#### ISU people for communication

Communication ability to clearly express opinion and get the message across

#### Teamwork-oriented



#### ISU people for collaboration

Commitment to achieving common goals by cooperating with people of different characteristics

#### Self-development



#### ISU people for growth

Enjoying learning either on advice from others, or learning something new

### Recruiting Policy

ISU Chemical implements a set of fair recruiting policies which do not discriminate against gender, academic background, or place of origin. We recruit talent with appropriate competence and appoint them to the right position. Our recruiting process consists of entry-level employees and senior employees. We sign MOUs with colleges to attract talented graduates. We have various recruitment options as necessary such as online job interviews to hire competent talents living abroad and to prevent COVID-19 infections.

### Fair Evaluation

ISU Chemical achieves the management philosophy based on the performance management regulation and pursues sustainable growth of the company by fair evaluation process. Employee evaluation consists of competence evaluation and performance evaluation. Competence evaluation examines the grade of an employee's competence based on behavioral indicators. Performance evaluation, meanwhile, looks into achievement status compared to team and individual goals for the year. ISU Chemical's employee evaluation also features self-evaluation, followed by the first and second evaluation by separate evaluators. The results from the first evaluation are discussed and confirmed with the employee. Then the second evaluation with the second evaluator ensures that the evaluation was fair through an additional discussion.

### Reasonable Compensation

ISU Chemical has in place a reasonable wage and compensation system to ensure that employees are rewarded based on their performance. We nurture and develop job performance based on objective evaluation through regular HR evaluation. This system contributes to talent nurturing as the results are reflected in promotion, salary, and position appointment. Performance evaluation is linked to wage rise, bonuses, performance incentives, and promotions. Employees with high performance can benefit from degree subsidies and an employee reward program.





### Training System

Newly hired employees and experienced employees undergo a three-month OJT that helps them acclimate to their work and teams. We also offer mentorship program for newly hired employees. Through those policies, newly hired employees and current employees can better understand one another and become easily integrated into the organization. New employees hired through the open recruitment have a chance to take a field tour of our overseas sites.

All employees have access to job competence training, both internal and external, depending on the needs and the duties of the position. For instance, technical employees attend long-term overseas training on a yearly basis. ISU Chemical provides position-customized training and executive training to help employees develop job competence.

ISU Chemical also supports employees' self-directed learning by providing online training and language courses, with all the costs covered by the company. We select assistant managers with high performance and provide them with core talent training to nurture them to be next-generation leaders.

ISU Group's training structure



### Employee Welfare and Benefits System

ISU Chemical introduced flexible working system such as a flexible commuting and a flexible working hour system for employee convenience. We provide the medical and health check-up expenses for employees and their spouses. We have an accident insurance to cover medical expenses in case our employees suffer from accidents and pay the full cost.

We support college tuition fees for employees' children, and provide dormitory, commuter buses and mortgage for employees.

Paid leaves are guaranteed separately on the days of family events such as marriage and bereavement. Wreaths and other supplies are provided for such events.

Employees are given three days of regular leaves in addition to their annual paid leave. They can also enjoy summer resort membership and condominiums in peak vacation seasons.

We also provide employees with prepaid cards, further improving employee access to welfare with increased choices.

Other benefits include rewards for long-tenured employees, congratulatory gifts for graduation for employees, and money gifts for childbirth.

#### ✔ Support for Club Activities

ISU Chemical supports around 10 employee clubs to ensure healthy leisure activities for employees.

#### ✔ Language Study Groups

ISU Chemical organizes and supports employees' language study groups by inviting external instructors. Employees with improved language test scores are given additional points in HR evaluation.





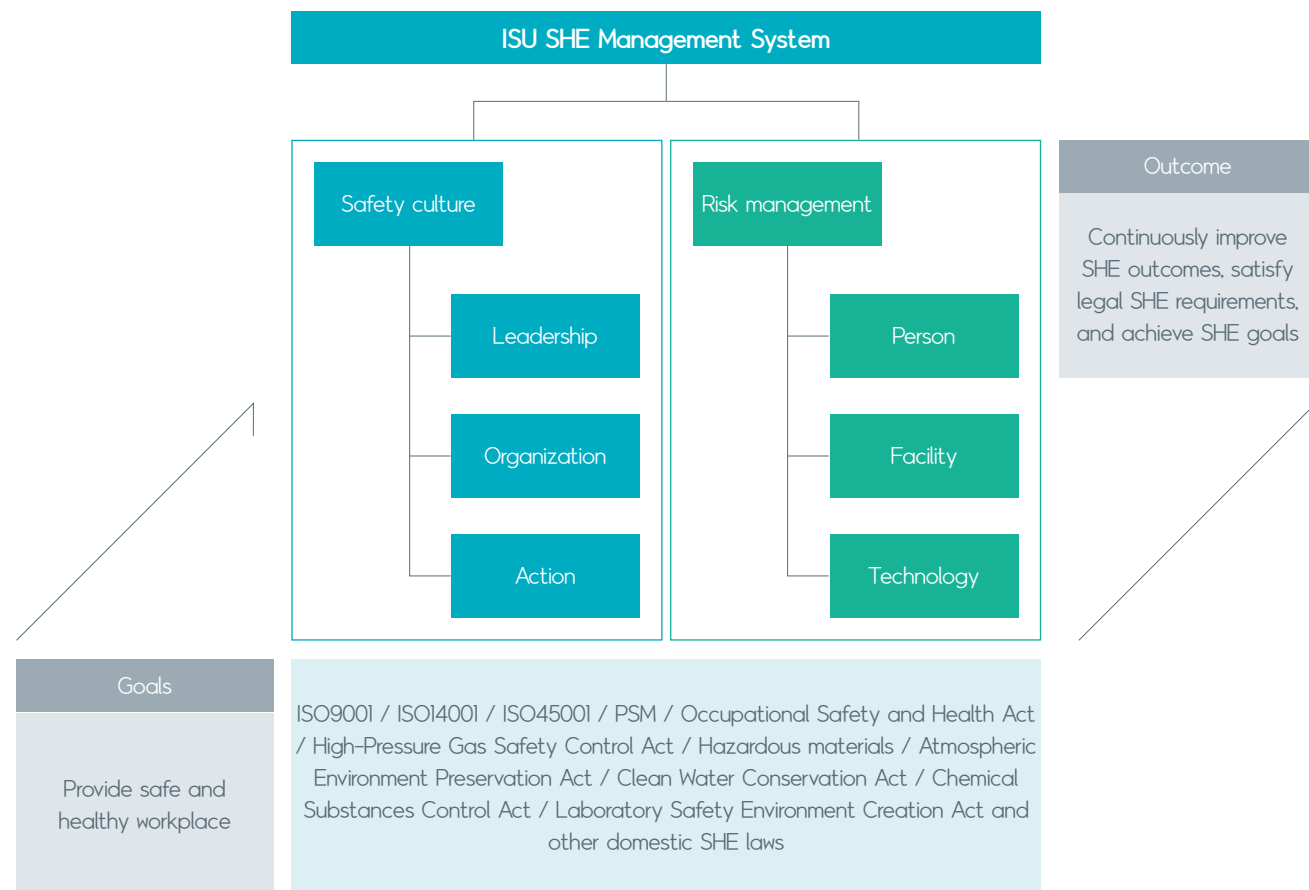
## 2-3 Enhancement of Health and Safety

ISU Chemical recognizes health and safety environment as the key values of management activities and strives to protect lives and the environment by setting policies and goals. We comply with the requirement of stakeholders as well as regulations and ensure transparent management for communication.

### ISU SHE Management System

In order to reinforce the implementation capability of health and safety management, ISU Chemical has established ISU SHE Management System consisting of two pillars: 'safety culture' and 'risk management'. Safety culture consists of three areas and 12 factors, while risk management come in three areas and 11 factors. We strive to prevent accidents and improve health and safety management continuously by operating a reliable SHE system.

ISU SHE Management System



### SHE Policy

## Safety Health Environmental Policy


ISU Chemical establishes the following SHE policies in operating the SHE Management System.

#### SHE Policy

- ① Establish the system to abide by the laws and regulations and meet the stakeholders' demands
- ② Identify SHE risks on a constant basis and create accident-free workplaces
- ③ Create eco-friendly workplaces through the development and use of green products

The company shall raise employees' awareness of SHE through education and promotion and shall disclose SHE policies at the request of stakeholders to demonstrate its commitment to SHE management.

Furthermore, all employees at the company shall completely understand the SHE policies, set detailed goals, and do their best to execute and satisfy the policy.

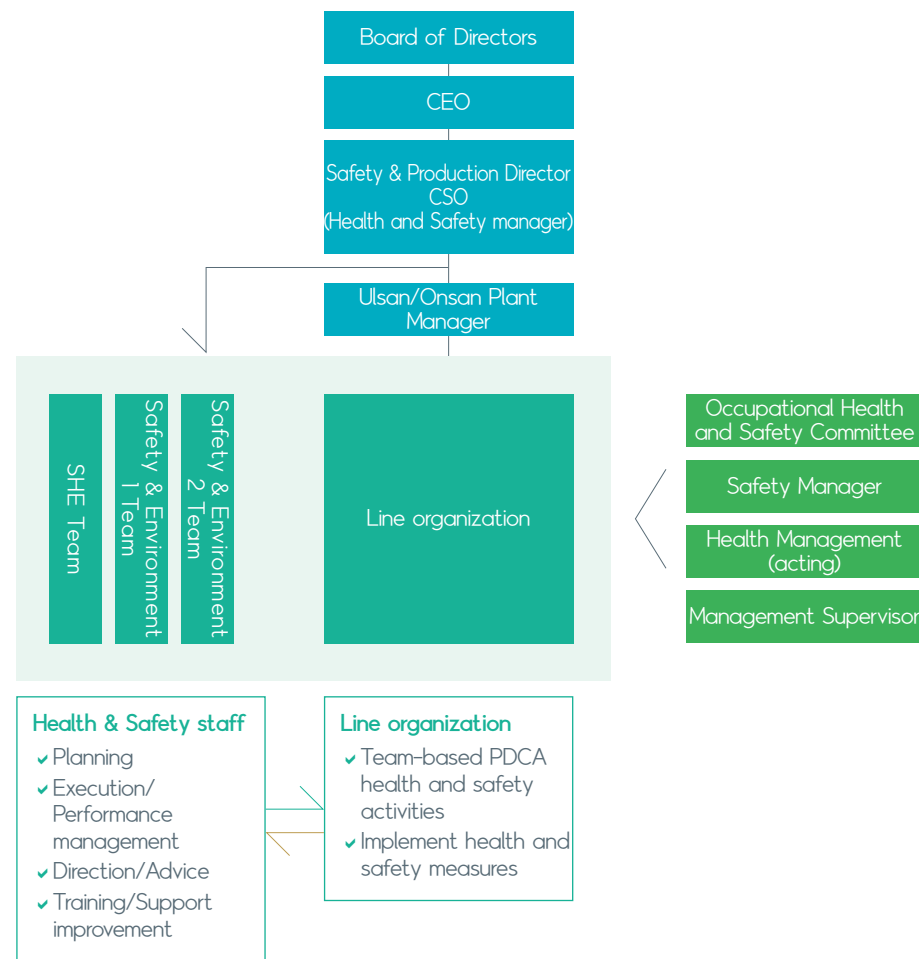
Jan. 5, 2018  
CEO of ISU Chemical, Lyu Seung-ho 





### SHE Implementation Organization

As the Serious Accidents Punishment Act enters into effect, ISU Chemical has appointed Director of Safety & Production Division as the CSO (Chief Safety Officer) to manage general matters related to health and safety at Ulsan and Onsan Plants in order to effectively respond to changing environment and conditions. ISU Chemical also placed SHE Team (safety planning for legal affairs) and Safety & Environment 1 and 2 Team (site safety management) under CSO's direct supervision. Also, to effectively comply with the Serious Accidents Punishment Act, we organized a task force team consisting of in-house safety officers in 2021 to manage legal affairs and health and safety matters.



### Safety Culture Activities

ISU Chemical conducted the safety culture assessment for the first time in 2014 in order to prevent accidents. Since then, we have been performing various activities to enhance employees' safety awareness and create proactive safety culture. By establishing ISU BSR (Basic Safety Rules) and CSR (Core Safety Rules), we embed basic safety awareness into everyday operations and identify safety risk factors by sharing information through diverse communication programs. We also carry out BBS (Behavior Based Safety) activities to prevent accidents caused by unsafe practices. We introduced a reward system and penal-

ty standards such as "You Great, You Good" to encourage employee participation. As a result of safety consulting and employee efforts over the past seven years, ISU Chemical obtained far higher scores than the initial evaluation (1.7 → 3.52 & 3.67) in the safety assessments conducted by two independent agencies in 2021. ISU Chemical promises to create the world's No.1 safety culture and safety management system through constant efforts.

### Safety Education and Training

ISU Chemical operates in compliance with systematic educational procedures to improve employees' safety capabilities in process, work safety, and chemical substances safety. In addition to legal trainings under the Occupational Safety and Health Act, we provide trainings for new employees such as on-site safety training and special safety training in case of facility expansion and regular maintenance. By doing so, we improve safety capabilities not just of our employees but also those of affiliates. In particular, we strive to ensure that all of our employees are equipped with the ability to respond to unexpected safety accidents by providing mandatory training in the safety experience center.

	Internal	External
Legal	<b>Regular Education</b> Collective education, Independent education, Education by safety officers	<b>Senior</b> General manager, supervisor, safety management expert (fire fighting, hazardous materials, high-pressure gas, etc.)
	<b>PSM</b> Audit result, risk assessment result, MSDS education, process of operator/maintenance education, emergency operation education	
	<b>Newly Hired Staff</b> Training for new employees	<b>License</b> HGV(Heavy goods vehicle) license, License for forklifts under 3 tons, Occupational safety inspector license
	<b>Position Change</b> Training for employees whose positions changed	
General	<b>Special education</b> Special education	
	<b>Employees</b> Safety culture, PSM, Safety management, Health management	<b>PSM</b> HAZOP, PSM general, inspector, safety investigation, MSDS
	<b>Subcontractors</b> Additional special education, general education	<b>Safety culture</b> Safety culture leadership, advanced safety culture
	<b>Visitors</b> Education for visitors	<b>Safety management</b> Fire safety, electricity safety, work safety, BBS, JSA, general safety management

Step I. Substantialization	Step II. capacity building
<b>1. Class Substantialization</b> <ul style="list-style-type: none"> <li>Establish education discipline</li> <li>Ex.) Manage laziness or wrongdoings</li> </ul>	<b>1. Enhance class capacity</b> <ul style="list-style-type: none"> <li>Safety instructor system for safety manager</li> <li>Intensive safety education for direct team</li> <li>Re-training for the lowest score subjects</li> <li>Evaluation of safety education</li> </ul>
<b>2. Steps substantialization</b> <ul style="list-style-type: none"> <li>Systemize safety education materials</li> <li>Extension of professional education for safety instructors</li> </ul>	<b>2. Staff capability strengthening</b> <ul style="list-style-type: none"> <li>Skill-up education for safety team members</li> </ul>



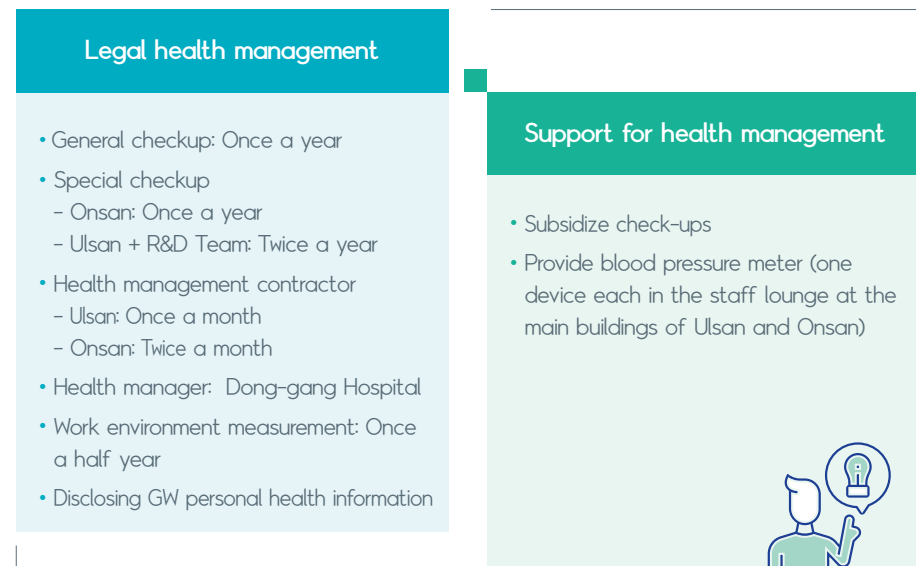
### Safety Inspections at Worksites

ISU Chemical conducts safety inspections of worksites by organizing a voluntary inspection team consisting of executives, team leaders, and part leaders. The monthly safety inspection is carried out according to the safety agenda and identifies risk factors at operations. Each team conducts audits on the management status of fire equipment and safety gears to ensure that safety regulations are observed. Also, by carrying out a safety instructor system, we share safety policies with the line organization and try to improve communication between safety staff and the line organization by giving guidances on activities and listening to field opinions.

### Health and Safety Management

ISU Chemical carries out various activities to ensure the health of our employees. We provide check-ups according to the Workplace Safety and Health Act. Employees who need a second opinion can utilize post-programs such as health consultations. We conduct work environment measurements and risk factor assessments of the musculoskeletal system to prevent the vocational diseases. The subsidy for check-ups offered to employees aged 40 or above has been expanded to offer all employees. We also carry out diverse programs and services by establishing stage-specific response measures against infectious diseases such as Covid-19 and providing employees with masks and diagnostic kits.

#### Employee Health Management



## 2-4 Responsible Supply Chain Management

Since the outbreak of COVID-19 and many other natural disasters, the issue of supply chain has increased in every cycle of production. Accordingly, supply chain management has become the key element to maintain corporate competitiveness. In response, given that it has a diverse portfolio of domestic and foreign suppliers, ISU Chemical is planning various policies and activities for suppliers as well as risk management across the supply chain.

### Suppliers ESG Risk Management

ISU Chemical signs a code of conduct agreement with partners regarding international regulations, standards, and legal requirements to ensure consistent implementation of its social responsibilities. With bases of the agreement, we hope to sustain and enhance our relationship and generate synergistic effects. We are planning to include the code of conduct in all contracts from this year. Furthermore, we would like to establish supply chain management system through establishing and categorizing supply chain assessment standards. We will continuously perform and monitor risk assessment to ensure that both ISU Chemical and the partners sustain their level of performance in global business environment.

#### Supplier Code of Conduct

- ① Suppliers should strive for continuous improvements to mitigate or minimize any negative impacts during production process on the environment and local communities, and comply with all relevant local and national environmental laws as well as international standards.
- ② Suppliers shall avoid any kind of corruption, extortion, or bribery, and adhere to applicable anti-corruption and anti-bribery laws. Suppliers also shall adhere to national and international foreign trade control laws in all business transactions. Also, whistleblowers should be protected under related laws with their disclosure properly assessed and investigated.
- ③ Suppliers shall not employ minors, below the locally applicable minimum legal age. Working hours and working conditions shall be observed.
- ④ All forms of labor against workers' voluntary will, forced labor, or exploitative labor shall be banned. Suppliers shall ensure that employment terms are clearly understood by workers and are provided in a written contract in a language they understand as per local and national laws.
- ⑤ Suppliers shall provide a safe and healthy working environment for all of their employees. Suppliers shall provide personal protective equipment appropriate to the nature of work and relevant training on health and safety systems on a regular basis.
- ⑥ Discrimination against race, the color of skin, gender, disability, or labor membership shall be prevented for recruitment, promotion, reward, or opportunities for training.
- ⑦ The work environment shall be free from sexual harassment, abuse, physical punishment, mental abuse, or other inhuman treatment, and respect all workers as decent individuals.
- ⑧ Legal requirements regarding minimum wage, welfare, working hours, and rewards shall be observed.
- ⑨ Suppliers shall ban the use of raw materials unethically obtained, establish a system to guarantee thereabout, and disclose information on due diligence regarding the place of origin and sources of raw materials.
- ⑩ Suppliers shall manage and protect the personal information of all stakeholders (including affiliates, customers, and employees). Suppliers shall also abide by the regulations regarding the collection, storage, process, transfer, and sharing of personal information.



## 2-5 Social Contribution Activities

ISU Chemical carries out social contribution activities under the management philosophy of "Create beautiful future with abundance and convenience"

### Goal & Direction of Social Contribution



### Direction I. Engagement with Local Communities

ISU Chemical holds activities and consultations to hear the voices of the local communities and pursue mutual growth with them.

To encourage employee participation, we launched 'ISU Volunteer Group' as part of our goals of 'creating a corporate culture prospering with local communities'. As part of this initiative, we not just give back a certain amount of our profit to local communities but also embed social contributions into our business culture. To hear voices from local communities, we conduct social contribution activities with local social enterprises. ISU Chemical has also carried out other social contribution activities such as purchasing locally-grown rice, creating jobs in the region, and sourcing from local suppliers. Examples include buying locally-grown rice; donating for children with heart diseases 'ISU HOF DAY'; applying for the campaign of voluntary service wave: I LOVE YOU sharing; and house remodeling for the socially marginalized.

Number of Voluntary Community Activities by Employees per year Except Donations

Year	Number of community activity programs	Total number of employees who participated	Average participation per employee
2019	10	777	1.9 times
2020	4	375	0.9 times
2021	4	381	0.9 times

### ✔ "Killing Two Birds with One Stone" Program

ISU Chemical provides a wide variety of professional services in cooperation with local communities such as independence trainings and employment-related activities including basic skills development and personalized services so that everyone can become a part of the local community.

♥ Partnership: Haeuri residence

### ✔ Support for People with Intellectual Disabilities in Communities

ISU Chemical supports programs for the local community to provide emotional stability and relieve stress through various hands-on activities for people with intellectual disabilities living in facilities. These programs contributed to providing opportunities for people with intellectual disabilities who have been emotionally deprived of due to the Covid-19 lockdown to participate in cultural activities. During the year-end holiday season when people were unable to enjoy outdoor activities due to the social distancing measures, We held a big Christmas party to help people with intellectual disabilities develop emotional stability.

♥ Partnership: Ulsan Chamsarang House





## Direction 2. Support for The Vulnerable

ISU Chemical strives to address the social imbalance by extending support to the socially marginalized. We are trying to create a world where all children can dream of a beautiful future by supporting those who are from low-income families or raised by single parents or grandparents. We carry out various social contribution activities, such as 'Exploring Jeju' and 'Onsan-Eup Designated Donations,' in cooperation with local children's centers. We also strive to address the social imbalance by supporting low-income senior citizens and the elderly with dementia.

### ✓ Activities for Children from Low-income Families

ISU Chemical practices ethical management by cooperating with welfare facilities and by participating in voluntary services for children from low-income families in the local communities. Besides, by distributing food and handicrafts made by children to other low-income community members, we promote educational roles and support for leisure activities.

♥ Partnership: Ulsan Nam-gu Welfare Center

### ✓ After-school Care Activity

Under the theme of "Be My Family", ISU Chemical serves as parents and siblings for children who do not have family in order to help them with their loneliness and further help them grow into members of our society. In particular, we support low-income children's cultural experience to ensure that they have access to cultural activities and develop a sense of pride.

♥ Partnership: Dream Village Local Child Center

### ✓ Activities for Senior Citizens

ISU Chemical carries out programs to help and improve senior citizens' life by providing emotional support, leisure activity support, consultation, everyday living support, local community resources development, and linked support. Through the program "Magic mirror on the wall, who is the fairest of all?", we teach the elderly with low pride about how to groom themselves to raise their satisfaction with life as well as their self-pride. These efforts have helped ISU Chemical to successfully promote social activities in the local communities.

♥ Partnership: Ulsan Jung-gu Silver Children's Center

### ✓ Support for Post-retirement Leisure Activities

"Flower garden in my heart" is the horticulture experience activity for a happy life for senior citizens held on a monthly basis. This program is designed to stimulate tactile sensation by using different tools and materials to prevent dementia and improve satisfaction with life by touching off past memories and improving motor skills.

♥ Partnership: Ulsan Silver Care Center

### ✓ Support for Cultural Activities of Seniors with Dementia

By providing "Theme experience for happiness and emotion" for senior citizens living isolated at their facilities due to dementia, we help the elderly enjoy cultural activities and raise the sense of self-respect through long-term programs.

♥ Partnership: Evergreen Nursing Home for the Elderly



## Direction 3. Create Clean Environment

ISU Chemical seeks to participate in programs for a clean environment such as 'clean bus stop' and 'Exotic figure program.' ISU Chemical strives to deliver a clean world that humanity dreams of.

### ✓ Clean Bus Stop

From 2022, we plan to regularly clean designated bus stops and support daily quarantine activities to prevent COVID-19 infection.



Strategic Direction 3

# Integrity: Transparent Business Operation

## 3-1 Ethical and Compliance Management

As demands for corporate social responsibility are increasing, ethical and compliance risks can have significant impacts on corporate management activities. Accordingly, ISU Chemical is strengthening the trust of stakeholders and society by internalizing compliance and ethical management into the organizational culture.

### Ethical Management

In 2003, ISU Chemical declared an ethical management charter and practice rules for all employees. Under the charter, we are seeking co-prosperity with customers, employees, local communities, and affiliates by fulfilling our social responsibility, while remaining faithful to a corporate's fundamental responsibility of making profits. We remain committed to a higher standard of ethics so that our employees can feel proud of working with ISU Chemical. The ethical management charter is applied not just to our employees but also to all affiliates and overseas companies on which we exert management rights in accordance with local regulations.

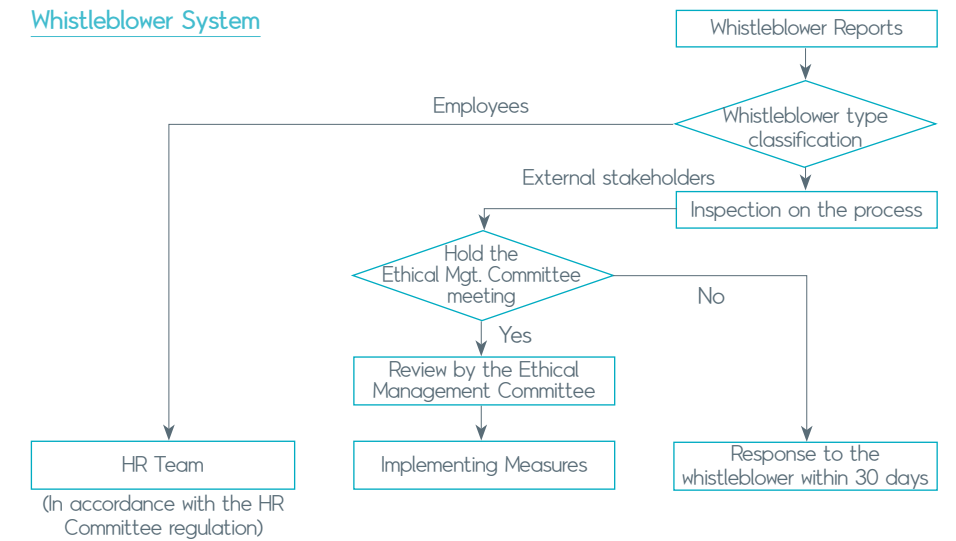
### Trainings on Ethical and Compliance Management

Under the key values of 'Sincerity,' 'challenge,' and 'customer satisfaction,' ISU Chemical will perform 'ethical management' to realize the goal of "Creating a beautiful future that adds the affluence and convenience to our life". To that end, we ensure that all employees at ISU Chemical take mandatory training on ethical management. We also strive to establish transparent and ethical corporate culture by offering a variety of online trainings on topics including anti-corruption, privacy protection laws, awareness of people with disabilities, anti-harassment, and prevention of sexual harassment at work. For laws that can have a significant impact on the company such as Chemical Substances Control Act, Act on Registration, Evaluation, Etc. of Chemicals, and Serious Accidents Punishment Act, we hold additional online and offline trainings, thus enhancing employees' awareness of compliance and minimizing potential compliance risks.

### Anti-corruption Policies

ISU Chemical operates a whistleblower system and a cyber reporting channel to enhance ethical management. Through these two systems which guarantee anonymity, stakeholders are able to talk freely about external and internal risks which may affect the company's ethical management. Reports received via these channels are first reviewed by relevant departments and then deliberated by the Ethical Management Committee, which the CEO sits as the head. The Ethical Management Committee takes procedures in accordance with the legal process or the company's regulations.

### Whistleblower System



### Ethical Management Charter

Based on the core values of "Sincerity," "Challenge," and "Customer Satisfaction," ISU Chemical intends to actively practice ethical management to realize the core purpose of "Creating a splendid future by adding affluence and convenience to our life." We declare that all employees will practice the following ethical guidelines with the goal of pursuing sustainable growth with stakeholders including customers, suppliers, local communities, and shareholders beyond just creating economic value.

**General Management** We respect free competition in the market and do not do anything that interferes with it. In addition, we comply with international conventions related to anti-corruption and domestic and foreign laws.

**Customers** We always listen to and respect customers' opinions and put the criteria for decision-making in the customer's perspective. We also strive to become a company where customers can trust and purchase products based on the principle of good faith.

**Employees** We do our best to become a company where each employee is recognized, works in a safe and comfortable environment, and is provided with equal opportunities and appropriate compensation to demonstrate their individual abilities. At the same time, employees need to clearly understand their duties and responsibilities in performing their tasks and make ethical judgments based on legal, transparent, and rationality.

**Suppliers** We guarantee fair participation opportunities to our suppliers and make joint efforts to prevent unfair practices, creating a relationship of mutual trust and mutual growth.

**Local Communities** We observe laws, pay taxes, do social voluntary services, preserve the environment and return profit to society, thereby contributing to the development of local communities.

**Shareholders** We secure accounting transparency, respect shareholders' rights, protect shareholders' investment assets, generate sound profits through management innovation, and guarantee reasonable dividends to shareholders, thereby receiving an evaluation consistent with our corporate value.

**Supervisory Institution** We comply with the ethical guidelines and operate the Ethical Management Committee to continuously raise the level of ethical management and conduct education, monitoring, and supervision.



## 3-2 Risk Management

A company may face various types of risks in all processes of its business activities. ISU Chemical minimizes direct and indirect impacts on the organization by establishing a risk management system.

### Integrated Risk Management System

ISU Chemical strives to enhance sustainability by identifying risks arising from management activities, determining efficient management methods, and minimizing risk factors.

For efficient risk management, all departments at ISU chemical classify and evaluate relevant risks at a planning phase for the coming year. Also, we apply an appropriate management method to those risks and share both the list of risks and management methods with the Planning & Coordination team. The Planning & Coordination team manages the company-wide risks by categorizing them according to their importances.

### Response Measures by Risk Type

Risk type	Risk details	Response strategy
Financial	Financial risks which may arise from management environment such as FX rate, interest fluctuation and liquidity.	<ul style="list-style-type: none"> <li>• Constant monitoring by relevant department</li> <li>• Use of Hedge</li> </ul>
Business	Risks resulting from business management such as health and safety, labor, human rights, product responsibility, information protection, and ethics and compliance, etc.	<ul style="list-style-type: none"> <li>• Routine process management</li> <li>• Goal management</li> <li>• Compliance system enhancement</li> </ul>
Environmental	Risks related to climate change and violation of environmental laws	<ul style="list-style-type: none"> <li>• Investment in environmental facilities (pollution reduction, energy efficiency increase, etc.)</li> <li>• Establishment of carbon emission strategies</li> </ul>
Potential	External risks such as pandemic, and political or social issues	<ul style="list-style-type: none"> <li>• Continued issue tracking and impact analysis</li> <li>• Establishment of contingency plan</li> </ul>

### Risk Management Process



### Audit on Quality, Health & Safety, and Environmental Management

ISU Chemical conducts audits on product quality, health and safety, and environmental management and takes corrective measures, thus improving quality, health and safety, and the environmental management system. The audits consist of the annual regular audit and special audit which is taken for an important change or if deemed necessary. Teams found to be non-conforming as a result of internal audit reply to the responsible team with the analysis of causes and a strategy for recurrence prevention, within 10 days.

### Management Diagnosis

ISU Chemical conducts management diagnosis for objective audits. We inspect task processes and monitor legal compliance. The report is shared with the department subject to the audit and monitoring is conducted on follow-up measures.

### Internal Accounting

In order to compile and disclose reliable financial statements, we run an internal accounting control system to prevent and detect errors and irregularities, which can distort financial statements.



### 3-3 Transparent Governance

Under the belief that sound and transparent governance is the foundation for global competitiveness, we established the transparent governance and practice responsible management.

#### Composition and Roles of the Board of Directors

The Board of Directors at ISU Chemical consists of three executive directors and one non-executive director. The directors are expected to possess the expertise to make a substantial contribution to the company's management. As the premium decision-making body, the Board of Directors reviews and resolves matters entrusted to them during the shareholders' meeting and other important matters related to the company's basic policies and business implementation. The Board of Directors enhances stakeholders' rights including shareholders by practicing transparent and independent decision-making rights. ISU Chemical will keep diversifying the Board of Directors to respond to the changing management environment from different perspectives.

(As of March 31, 2022)

Classification	Name	Recommended by	Appointment	Expiration	Career	Responsibility
Executive Director (CEO, BOD Chairman)	Lyu Seung-ho	Board of Directors	2020.03.27	2023.03.27	B.A. & M.A. in Chemical Engineering, Seoul National University / Current) CEO, ISU Chemical	CEO
Executive Director	Im Tae-gi	Board of Directors	2022.03.31	2025.03.31	B.A. in French Language & Literature, Yonsei University / Current) Management Division Director, ISU Chemical	Management Division Director
Executive Director	Kim Dong-min	Board of Directors	2022.03.31	2025.03.31	B.A. in Chemical Engineering, Pusan National University / Current) CSO, ISU Chemical	CSO
Non-executive Director	Huh Kun-soo	Board of Directors	2020.03.27	2023.03.27	Ph.D. in Mechanical Engineering, University of Michigan / Current) Professor in Automotive Engineering, Hanyang University	Management Advisor

#### Operation of the Board of Directors

The Board of Directors operates in an efficient and reasonable manner to make the best possible management decisions. The Board of Director's meeting is convened over four times a year and the temporary meeting is held on an irregular basis when necessary. ISU Chemical compiles meeting minutes, keeps meeting record, and reflect their activities on the annual corporate governance report to disclose factors such as individual directors' attendance and voting on major agenda.

#### Operation of Subcommittees under the CEO

ISU Chemical runs various subcommittees under the CEO to review and resolve major agendas pursuant to management. Some of the main subcommittees are ESG Management Committee, HR Committee, Quality Management Committee, imTpm Promotional Committee, Disciplinary Committee, Ethical management Committee, and Health and Safety Committee. Furthermore, ISU Chemical formed a new business council in 2021 to craft strategies for new business opportunities and new market identification.

#### Role of Subcommittees

Subcommittee	Major agendas and functions
ESG Management Committee	- Resolution on ESG management strategy and material issues (ESG management strategy, tasks, ESG Report, major disclosures, etc.)
HR Committee	- Deliberation and decision on the basic HR management policy - Determination of employee recognition and discipline - Deliberation and decision on whether the results of HR evaluation are appropriate
Quality Management Committee	- Review of quality/environment/health and safety management performances and suggestion of improvement - Approval of plans and results on internal and external ISO examinations
imTpm Promotion Committee	- Building basic guidances for imTpm promotions - Deliberation and adjustment of mid- to long-term promotion plans - Comprehensive evaluation of implementation results and review of major problems
Environmental Management Committee	- Review and confirmation of environmental goals - Review of environmental performances - Review of the suitability of results for corrective and preventive actions
Health & Safety Committee	- Confirmation of health and safety trainings for employees - Investigation of the cause of major disasters and establishment of measures to prevent recurrence - Review of PSM and internal audit results on safety, environment, and health
Energy management Committee	- Setup of energy management guidance and goals - Approval of energy saving plans - Introduction of new technologies for energy saving and review and examination of their utilization
Disciplinary Committee	- Decision of referral to HR Committee in case of serious safety violations related to work
Job Invention Deliberation Committee	- Establishment of basic policies for the management of industrial property rights - Matters concerning the acquisition, transfer, license grant and other disposition of industrial property rights
Ethical Management Committee	- Decision of referral to HR committee when an employee's ethical problem occurs - Review of ethical management items
New Business Council	- Stage Gate introduction and evaluation - Prioritization of new business items - Sharing and decision-making of new business items

## 3-4 Customer Satisfaction Management

In the increasingly fierce global competition, improving customer satisfaction in all business activities is an essential requirement for the survival and growth of a company. ISU Chemical not only provides the highest quality products but also communicates with customers around the world to meet their requirements, thereby increasing customer satisfaction.

### Customer Satisfaction Policies and Activities

Due to intensifying competition in the global market and supply chain issues caused by Covid-19, our customers are making most specific and aggressive demands not only for product quality, but also for accurate delivery times and stable supplies. ISU Chemical provides products and services that meet the needs of customers in various regions, from multinational companies to small domestic agencies. In addition, if there are any complaints, we are carrying out activities to improve on those points. ISU Chemical will provide services that customers want through proactive communication while developing products that the market needs by identifying the global trends.

### Customer Visiting Day (including their family members)

We hold a Customer Visiting Day annually for key stakeholders such as long-term contract customers and companies wishing to make new transactions. This program, which has been suspended since the outbreak of Covid-19, is expected to resume soon or be replaced with a new program.

### Customer Satisfaction Management

ISU Chemical conducts customer satisfaction survey twice a year. The survey features questionnaire regarding product quality, delivery and transportation, customer service, and other general feedback on matters to be improved. The feedback from the surveys is shared with relevant departments to improve customer satisfaction.

### Complaints Resolution Process

ISU Chemical operates an integrated complaints resolution system. This system manages the whole process from the moment complaints about product quality or services are received. This system handles customer complaints promptly and accurately, which in turn improves customer satisfaction and secures trust with customers. Complaints from customers are used as basic data for improvement and prevention of recurring troubles. For the last step, we share the lists of surveys and results with the relevant teams such as sales, production, or logistics to discuss prevention measures.

## 3-5 Information Protection

With the acceleration of digital transformation, the information protection environment is changing rapidly. In response, ISU Chemical is preparing an information protection system to preemptively respond to information leakage and cyber threats.

### Information Protection System

ISU Chemical has detailed guidelines about physical security and personnel security. These guidelines are being managed under the Trade Secret Management Regulations, which deal with the company's key technology and strategy. Our business secret protection regulations cover all areas of security and information management, including device security and employee responsibilities regarding information. The regulations clarify access rights for each information and classification of information. We have established a protection procedure covering from the generation of information to disposal. Details about business secret management list, access, use, and borrow are shared and reviewed by the department in charge of security.

### Establishment of In-house Security System

We strive to enhance the information protection and management system by upgrading physical security such as access control and system security such as security programs. Also, by holding training on information security on a regular basis, we ensure that our employees are aware of the importance of information security. As we have implemented a company-wide security system, data and files in computers and laptops with this security system installed cannot be extracted to external storage devices without authorization. All electronic documents created and stored on the devices with the security system installed also cannot be opened by unauthorized external persons in cases of those documents leaked. Employees are not able to access the company's intranet from personal devices without the security system installed in order to protect data stored in a shared directory. The Help Desk, operated 24/7, ensures a swift and safe response in case of any security emergency.

### Information Protection Training

ISU Chemical regularly conducts information protection training for employees as well as visitors who need to enter the company and access the company's network. We hold regular training sessions once a year to minimize security incidents. Irregular education is also offered on response measures when new issues arise or the risk of a certain information incident increases. There are also campaigns to raise employees' awareness of information security through bulletin boards and emails.



**Balance Sheet (non-consolidated)**

54th As of December 31, 2021  
 53rd As of December 31, 2020  
 52nd As of December 31, 2019

(Unit: KRW in millions)

Classification	54th	53rd	52nd
Current assets	376,976	314,702	240,151
Non-current assets	609,709	554,327	734,844
<b>Total assets</b>	<b>986,685</b>	<b>869,029</b>	<b>974,995</b>
Current liabilities	329,024	283,021	303,628
Non-current liabilities	142,668	108,967	86,905
<b>Total liabilities</b>	<b>471,692</b>	<b>391,988</b>	<b>390,533</b>
Capital stock	139,798	121,575	76,390
Capital surplus	170,827	152,186	130,092
Retained earnings	185,303	154,924	317,263
<b>Total equity</b>	<b>514,993</b>	<b>477,041</b>	<b>584,462</b>

**Income Statement (non-consolidated)**

54th From January 1. to December 31, 2021  
 53rd From January 1. to December 31, 2020  
 52nd From January 1. to December 31, 2019

(Unit: KRW in millions)

Classification	54th	53rd	52nd
Sales	1,318,676	943,467	1,212,136
Gross profit	132,973	92,576	59,821
Operating income	77,627	44,597	17,269
Non-operating income	2,695	653	963
Non-operating expense	408	5,335	2,061
Net income (loss)	38,790	(153,108)	(5,752)

**FINANCIAL  
PERFORMANCE**



# ESG FACTBOOK

65 ESG Performance Data

## Economic Performance

Classification	Indicator	Unit	2021	2020	2019
Organization scale*	Number of employees	Persons	421	408	413
	Number of worksites	Places	10	11	11
	Sales	Million KRW	1,318,676	943,467	1,212,136
	Equity	Million KRW	514,993	477,041	584,462
Economic value creation	Liabilities	Million KRW	471,692	391,988	390,533
	Revenue	Million KRW	1,318,676	943,467	1,212,136
Direct economic value creation and distribution	Operating expenses	Million KRW	88,975	76,971	65,424
	Wage and welfare benefits	Million KRW	50,711	47,954	44,988
	Dividend	Million KRW	13,603	7,068	5,810
	Corporate tax	Million KRW	21,905	-1,585	13,645
	Political donation	Million KRW	0	0	0
Government ownership	Rate of government's share ownership	%	0	0	0

\* Sales, equity, and liabilities data are based on non-consolidated financial statement.

## Environmental Performance

Classification	Indicator	Unit	2021	2020	2019	
Environmental policy	EMS (Environmental Management System) certification	Workplaces certified for EMS	Places	2	2	2
	Ratio of workplaces certified for EMS	%	20.0%	18.2%	18.2%	
Climate change strategy and goal	Reduction of GHG emissions	GHG emissions in base year	tCO <sub>2</sub> -eq	302,389	280,812	265,852
	Energy consumption*	Total energy consumption in the organization	TJ	5,369	5,136	4,964
Energy consumption in the organization	Non-renewable energy consumption	LNG	TJ	1,890.0	2,055.3	2,342.8
		LPG	TJ	1,353.4	980.8	757.9
	Fuel gas	TJ	525.3	493.9	384.2	
	Fuel oil	TJ	450.0	511.0	404.9	
	Indirect energy consumption	Electricity	TJ	1,128.4	1,083.3	1,045.6
Indirect energy sales	Steam	TJ	22.8	11.5	14.2	
	Electricity	TJ	0.000	0.000	0.000	
	Air conditioning/heating	TJ	0.000	0.000	0.000	
Ratio of renewable energy consumption	Steam	TJ	0.000	0.000	0.000	
	Renewable energy in the organization	%	0	0	0	
Energy intensity	Rate of electrical grid use	%	0	0	0	
	Energy intensity (compared with production volume)	TJ/MT	0.00984	0.00952	0.00932	
Energy consumption costs	Annual total energy consumption costs	Million KRW	60,872	52,810	53,397	
Reduction of energy consumption	Energy saving (based on energy conservation and efficiency improvement)	Joules	0.000	0.000	0.000	

\* Energy consumption data may be slightly different from the data of the Greenhouse Gas Information Center.



Classification			Indicator	Unit	2021	2020	2019
Reduction of energy requirements for products and services			Energy saving through energy efficiency improvement for products	Joules	0.000	0.000	0.000
Direct GHG emissions (Scope 1)			Total direct GHG emissions (Scope 1)	tCO <sub>2</sub> -e	246,930.2	227,415.7	214,133.1
			Biogenic carbon dioxide emissions	tCO <sub>2</sub> -e	0.000	0.000	0.000
			Inclusiveness of direct GHG data (disclosure rate of emission data)	%	100	100	100
Indirect GHG emissions (Scope 2)			Total location-based indirect GHG emissions (Scope 2)	tCO <sub>2</sub> -e	55,460.3	53,397.7	51,720.8
			Inclusiveness of indirect GHG data (disclosure rate of emission data)	%	100	100	100
GHG emission intensity			GHG emission intensity (compared with production volume)	tCO <sub>2</sub> -e/MT	0.554351011	0.520574617	0.499064567
Reduction of GHG emissions			Reduced emission through GHG reduction activities (Scope 1)	tCO <sub>2</sub> -e	0.0	0.0	0.0
			Reduced emission through GHG reduction activities (Scope 2)	tCO <sub>2</sub> -e	0.0	0.0	0.0
Water consumption	Total consumption	Onsan Plant	Water consumption	Metric tons	547,294	534,265	524,425
		Ulsan Plant	Water consumption	Metric tons	477,737	444,043	456,199
	Water intake by source	Onsan Plant	Water intake - industrial water	Metric tons	547,294	534,265	524,425
		Ulsan Plant	Water intake - industrial water	Metric tons	477,737	444,043	456,199
Reused and recycled water	Total wastewater discharge by destination	Onsan Plant	Wastewater discharge (marine)	megaliter	128	103	119
		Ulsan Plant	Wastewater discharge (marine)	megaliter	89	75	89
	Onsan Plant	Wastewater discharge (others)	megaliter	122	137	102	
	Ulsan Plant	Wastewater discharge (others)	megaliter	55	38	46	
	Onsan Plant	Wastewater discharge - desalination	megaliter	128	103	119	
	Ulsan Plant	Wastewater discharge - desalination	megaliter	89	75	89	
	Total wastewater discharge based on water quality	Onsan Plant	Wastewater discharge - other wastewater	megaliter	122	137	102
		Ulsan Plant	Wastewater discharge - other wastewater	megaliter	55	38	46
Water-related laws	Violation of water-related laws	Number of violations of water quality permits, water quality standards and regulations	Cases	0	0	0	
Waste generated	Total waste generated	Total waste			666	914	1,053
		Onsan Plant	General waste	Metric tons	343	474	371
			Designated waste		324	440	682
			Total waste		534	414	350
		Ulsan Plant	General waste	Metric tons	168	201	263
			Designated waste		169	43	61
Waste recycled during treatment	Total waste recycled during treatment	Construction waste			197	170	26
		Total waste recycled during treatment			487	439	558
		Onsan Plant	General waste	Metric tons	179	29	45
			Designated waste		308	410	514
		Total waste recycled during treatment			427	246	119
		Ulsan Plant	General waste	Metric tons	94	50	57
	Designated waste		136	26	37		
	Construction waste		197	170	26		

Classification			Indicator	Unit	2021	2020	2019
Waste recycled during treatment	Total hazardous substances recycled during treatment	Onsan Plant	Total weight of recycled hazardous substances	Metric tons	421.9	400.2	513.7
			Total		421.9	400.2	513.7
	Ulsan Plant	Total weight of recycled hazardous substances	Metric tons	135.8	26.1	37.13	
		Total		135.8	26.1	37.13	
	Total non-hazardous substances recycled during treatment	Onsan Plant	Total weight of recycled non-hazardous substances	Metric tons	65.4	29.01	44.76
			Total		65.4	29.01	44.76
	Ulsan Plant	Total weight of recycled non-hazardous substances	Metric tons	197.3	220.1	82.2	
		Total		197.3	220.1	82.2	
	Total hazardous / non-hazardous substances recycled during treatment	Onsan Plant	Hazardous substances recycled off-site	Metric tons	421.9	400.2	513.7
			Non-hazardous substances recycled off-site		65.4	29.0	44.8
		Ulsan Plant	Hazardous substances recycled off-site	Metric tons	135.8	26.1	37.1
			Non-hazardous substances recycled off-site		197.3	220.1	82.2
Weight of directly disposed waste	Onsan Plant	Total waste disposed directly	Metric tons	180.1	474.5	494.6	
	Ulsan Plant	Total waste disposed directly		106.7	167.6	236.7	
Directly disposed general waste	Onsan Plant	Directly disposed general waste in the process of incineration (not including energy recovery)	Metric tons	26.6	81.8	89.3	
		Directly disposed general waste in landfills		115.7	268.2	237.2	
		Total directly disposed general waste		142.2	350.0	326.6	
	Ulsan Plant	Directly disposed general waste in the process of incineration (not including energy recovery)	Metric tons	10.5	25.2	38.6	
		Directly disposed general waste in landfills		64.0	125.9	187.1	
		Total directly disposed general waste		74.56	151.01	225.7	
Directly disposed designated waste	Onsan Plant	Directly disposed designated waste in the process of incineration (not including energy recovery)	Metric tons	14.1	29.7	156.8	
		Total directly disposed designated waste		15.5	29.7	168.1	
Ulsan Plant	Directly disposed designated waste in the process of incineration (not including energy recovery)	Metric tons	32.2	16.6	10.9		
	Total directly disposed designated waste		32.2	16.6	10.9		
Directly disposed general / designated waste	Onsan Plant	Directly disposed general waste off-site	Metric tons	142.2	350.0	326.6	
		Directly disposed designated waste off-site		15.5	29.7	168.1	
	Ulsan Plant	Directly disposed general waste off-site	Metric tons	74.6	151.0	225.7	
		Directly disposed designated waste off-site		32.2	16.6	10.9	
Air pollutants	Air pollutants emissions	NOx emissions			132,352	145,109	174,613
		Onsan Plant	SOx emissions	kg	8,819	10,674	14,310
			VOC emissions		45.4	45.1	43.8
			PM emissions		2,872.7	2,007	2,405
		Ulsan Plant	NOx emissions		172,323.0	61,142.5	193,720.7
			SOx emissions	kg	9,336.0	69,022.2	-
			VOC emissions		228.1	213.2	212.0
PM emissions			1,559.6	2,429.1	2,375.6		



Classification		Indicator	Unit	2021	2020	2019
Water pollutants	Onsan Plant	COD management	Ton	2.32	2.44	0.85
		BOD management		1.37	2.75	0.55
		SS management		0.82	1.23	0.41
	Ulsan Plant	COD management	Ton	0.47	0.35	0.43
		BOD management		0.19	0.12	0.48
		SS management		0.18	0.06	0.11
Hazardous substances	Hazardous substances generated	Weight of hazardous substances generated	Metric tons	0.24	0.22	0.22
GHG Category registration	GHG Category 12	Number of products including GHG Category 1 & 2	Products	30	30	30
		Ratio of products including GHG Category 1 & 2	%	29	29	29
		Ratio of products that received risk assessment among those including GHG Category 1 & 2	%	0	0	0
Violation of environmental laws and regulations	Onsan Plant	Number of fines and non-monetary sanctions imposed for violations of environmental laws	Cases	1	1	0
		Fines due to violations of environmental laws	Million KRW	0	0	0
		Number of non-monetary sanctions	Cases	1	1	0
		Number of cases brought to the dispute resolution system	Cases	0	0	0
	Ulsan Plant	Number of fines and non-monetary sanctions imposed for violations of environmental laws	Cases	0	0	0
		Fines due to violations of environmental laws	Million KRW	0	0	0
		Number of non-monetary sanctions	Cases	0	0	0
		Number of cases brought to the dispute resolution system	Cases	0	0	0
Biodiversity	Identification of biodiversity risk areas	Area of local business with high biodiversity value	m <sup>2</sup>	0	0	0

## Social Performance

Classification		Indicator	Unit	2021	2020	2019
Investment agreement and contact considering human rights	Suppliers	Number of Investment agreements and contacts considering human rights	Cases	0	0	0
		Ratio of Investment agreements and contacts considering human rights	%	0	0	0
Employees and workforce information	Male	Number of regular employees	Persons	347	336	333
		Number of contract employees	Persons	25	20	26
	Female	Number of regular employees	Persons	42	45	47
		Number of contract employees	Persons	7	7	7
	Headquarters	Number of regular employees	Persons	75	70	71
		Number of contract employees	Persons	8	4	2
	Onsan Plant	Number of regular employees	Persons	214	212	209
	Ulsan Plant	Number of regular employees	Persons	100	99	100
	Onsan Plant	Number of contract employees	Persons	15	16	23
	Ulsan Plant	Number of contract employees	Persons	9	7	8

Classification		Indicator	Unit	2021	2020	2019	
Employees and workforce information	Male	Number of full-time employees	Persons	380	364	365	
	Female	Number of full-time employees	Persons	48	52	54	
	Male	Number of part-time employees	Persons	0	0	0	
	Female	Number of part-time employees	Persons	0	0	0	
Employment structure	Gender	Male	%	89	88	87	
		Female	%	11	13	13	
	Age	Under 30	%	7	4	4	
		30-49	%	59	58	58	
		50 and older	%	35	38	38	
	Other diversity indicators	Foreigner	%	0	0	0	
Disables		%	1.4	1.4	1.2		
National veterans		%	16	17	17		
New recruits	Total	Number of new employees	Persons	38	17	17	
	Age	Number of employees under 30	Persons	15	2	7	
		Ratio of employees under 30	%	39	5	18	
		Number of employees aged 30-49	Persons	18	7	8	
		Ratio of employees aged 30-49	%	47	18	21	
	Gender	Number of employees over 50	Persons	5	8	2	
		Ratio of employees over 50	%	13	21	5	
	Employee turnover	Gender	Number of male employees	Persons	35	14	14
			Ratio of male employees	%	92	82	82
		Age	Number of female employees	Persons	3	3	3
Ratio of female employees			%	8	18	18	
Total		Number of employee turnover (total)	Persons	34	19	13	
		Number of voluntary turnover (housework, study, job transfer, etc.)	Persons	22	9	11	
	Ratio of voluntary turnover (total)	%	65	47	85		
	Number of non-voluntary turnover (retirement, executive retirement, recommended resignation, transfer to affiliates)	Persons	12	10	2		
Employee turnover	Age	Ratio of non-voluntary turnover	%	35	53	15	
		Number of employees under 30	Persons	10	2	3	
	Gender	Ratio of employees under 30	%	29	11	23	
		Number of employees aged 30-49	Persons	11	9	5	
	Total	Ratio of employees aged 30-49	%	32	47	38	
		Number of employees over 50	Persons	13	8	5	
		Ratio of employees over 50	%	38	42	38	
		Number of male employees	Persons	25	15	10	
Gender	Ratio of male employees	%	74	79	77		
	Number of female employees	Persons	9	4	3		
Total	Ratio of female employees	%	26	21	23		



Classification	Indicator	Unit	2021	2020	2019
Compensation	Entry-level salary of male employees	KRW	3,720,094	3,720,094	3,647,472
	Entry-level salary of female employees	KRW	3,347,850	3,347,850	3,283,672
	Ratio of basic entry-level salary by gender to the regional minimum wage				
	Minimum wage	KRW	1,822,480	1,795,310	1,745,150
	Ratio of male employees' entry-level salary to minimum wage	%	204	207	209
	Ratio of female employees' entry-level salary to minimum wage	%	184	186	188
Retirement pension	Contribution rate (employee/employer)	%	0.2	0.1	0.3
Employees eligible for parental leave	Number of male employees	Persons	78	82	83
	Number of female employees	Persons	8	9	10
Employees who used parental leave	Number of male employees	Persons	0	0	0
	Number of female employees	Persons	8	8	9
Employees who returned to work after parental leave	Number of male employees	Persons	0	0	0
	Number of female employees	Persons	8	8	9
At least 12-month work after returning to work	Number of male employees	Persons	0	0	0
	Number of female employees	Persons	8	8	9
	Ratio of female employees	%	100	100	100
Occupational accident	Number of fatalities	Persons	0	0	0
	Ratio of fatalities	%	0	0	0
	Number of serious injuries	Persons	0	0	0
	Ratio of serious injuries	%	0	0	0
	Number of work-related injuries recorded	Persons	0	0	0
	Ratio of work-related injuries recorded	%	0	0	0
Job-related disease	Time lost due to injury	Hours	0	0	0
	Number of fatalities	Persons	0	0	0
	Ratio of fatalities	%	0	0	0
	Number of disease incidents	Cases	0	0	0
	Ratio of disease incidents	%	0	0	0
Training expense	Average training expense per employee	원	582,575	419,695	1,255,990
Ratio of employees who received performance evaluation and career development examination	Gender				
	Male	%	100	100	100
	Female	%	100	100	100
Position	Executives	%	100	100	100
	Team leader / department head /	%	100	100	100
	Senior manager / manager / mechanic	%	100	100	100
	Assistant manager / staff / contract / others	%	100	100	100
Equal salary	Average salary per male employee	Million KRW	99	98	91
	Average salary per female employee	Million KRW	70	68	59
	Ratio of female basic salary	%	70.9	68.8	64.3

Classification	Indicator	Unit	2021	2020	2019
Occupational Safety and Health (OSH) management system	Ratio of employees subject to OSH management system	%	100	100	100
	Ratio of suppliers subject to OSH management system	%	100	100	100
	Ratio of employees subject to OSH management system that was internally evaluated and verified	%	100	100	100
	Ratio of supplier employees subject to OSH management system that was internally evaluated and verified	%	100	100	100
	Ratio of employees subject to OSH management system that was externally evaluated and verified	%	100	100	100
	Ratio of supplier employees subject to OSH management system that was externally evaluated and verified	%	100	100	100
	ISO 14001 certification coverage ratio	%	100	100	100
Ratio of expenditure from suppliers	Purchasing from local suppliers				
	Procurement costs of local (domestic) suppliers	Million KRW	1,007,808	667,149	1,034,957
	Procurement costs of entire suppliers	Million KRW	1,043,655	702,701	1,086,155
	Ratio of procurement costs of local suppliers	%	96	96	97
Violation of customer information protection and customer data breach	Number of customer complaints received				
	Number of complaints that prove violations of customer privacy (external parties)	Cases	0	0	0
	Number of complaints that prove violations of customer privacy (regulatory bodies)	Cases	0	0	0
	Customer data				
	Number of customer data leakages	Cases	0	0	0
	Number of customer data thefts	Cases	0	0	0
	Number of lost customer data	Cases	0	0	0

## Governance Performance

Classification	Indicator	Unit	2021	2020	2019	
Number of BOD members	Total	Persons	4	4	4	
	Gender	Male	Persons	4	4	4
		Female	Persons	0	0	0
	Age	Under 30	Persons	0	0	0
30~49		Persons	0	0	1	
50 and older		Persons	4	4	3	
BOD composition	Number of independent (non-executive) directors	Persons	1	1	1	
	Ratio of independent (non-executive) directors	%	25	25	25	
	Number of senior executives	Persons	14	12	12	
	Number of local senior executives	Persons	14	12	12	
	Ratio of local senior executives	%	100	100	100	
BOD diversity	Number of female directors	Persons	0	0	0	
	Ratio of female directors	%	0	0	0	
BOD efficiency	Average tenure of directors	Years	2	3	3	



Classification	Indicator	Unit	2021	2020	2019
BOD and committee operation	Number of BOD meetings held	Times	23	27	24
	Advance notice before BOD meeting	Days	1	1	1
	Number of non-executive directors with low attendance (75% or lower)	Persons	0	0	0
	Number of agendas that non-executive directors objected to or presented with a revision opinion	Cases	0	0	0
Compensation policy	Fixed pay	Million KRW	872	842	785
	Variable pay (including performance-based, stock-based, bonus, etc.)	Million KRW	319	406	127
	Severance pay	Million KRW	0	0	0
	Refund of executive remuneration	Million KRW	0	0	0
	Maximum vesting period for CEO's variable pay	Years	0	0	0
Headquarters	Annual total compensation of the highest-paid employee	Million KRW	1,915	1,821	1,276
	Median annual total compensation of all employees		78	80	78
	Annual total compensation ratio of the highest-paid employee	%	2,459	2,272	1,636
Ulsan Plant	Annual total compensation of the highest-paid employee	Million KRW	218	267	221
	Median annual total compensation of all employees		90	90	83
	Annual total compensation ratio of the highest-paid employee	%	243	297	265
Onsan Plant	Annual total compensation of the highest-paid employee	Million KRW	236	282	233
	Median annual total compensation of all employees		83	82	77
	Annual total compensation ratio of the highest-paid employee	%	284	345	301
Headquarters	Increase in annual total compensation of the highest-paid employee in the previous year		5.2	43.0	2.0
	Increase in median annual total compensation of all employees in the previous year	%	8	13	-3
	YoY increase in annual total compensation of the highest-paid employee		0.7	3.3	-0.7
Ulsan Plant	Increase in annual total compensation of the highest-paid employee in the previous year		-28.0	21.0	0.3
	Increase in median annual total compensation of all employees in the previous year	%	5.0	4.0	0.9
	YoY increase in annual total compensation of the highest-paid employee		-5.6	5.3	0.3
Onsan Plant	Increase in annual total compensation of the highest-paid employee in the previous year	%	-17.0	21.0	0.1
	Increase in median annual total compensation of all employees in the previous year	%	-7.0	6.0	4.0
	YoY increase in annual total compensation of the highest-paid employee	%	-2.4	3.5	0.0
Corporate ownership / operation	Share ownership of executive directors excluding the largest shareholder and affiliated persons	%	0.06	0.05	0.08
	Share ownership of registered executives	%	0.03	0.01	0.01
	Share ownership of the largest shareholder and affiliated persons	%	28.18	32.37	39.62
	Prior notice on general shareholders' meeting	Days	15	15	15
Internal transaction	Total investments in subsidiaries to total equity	%	64	57	76

Classification	Indicator	Unit	2021	2020	2019	
Corporate ownership / operation	Internal transaction	Total guarantee for subsidiaries to total equity	Million KRW	205,390	270,545	286,551
Stakeholder communication		Number of IR conference held	Cases	0	1	2
		Number of voluntary disclosure	Cases	0	2	0
		Inquiry disclosure	Cases	0	0	0
Training on anti-corruption policy and procedure	BOD	Ratio of BOD members who received anti-corruption training	%	0	0	0
	Employees	Ratio of employees who received anti-corruption training	%	99.8%	100.0%	0.0%
Application of the code of conduct	Employees	Ratio of employees subject to the code of conduct	%	99.8%	100.0%	0.0%
	Suppliers	Ratio of suppliers subject to the code of conduct		0	0	0
	Employees	Ratio of employees who signed the code of conduct		0	0	0
	Suppliers	Ratio of suppliers who signed the code of conduct	%	0	0	0
Signature on the code of conduct	Subsidiaries	Ratio of subsidiaries who signed the code of conduct		0	0	0
	Joint ventures	Ratio of joint ventures who signed the code of conduct		0	0	0
Ethical management and code of conduct	Employees	Ratio of employees who received training on the code of conduct		0	0	0
	Suppliers	Ratio of suppliers who received training on the code of conduct	%	0	0	0
Training on the code of conduct	Subsidiaries	Ratio of subsidiaries who received training on the code of conduct		0	0	0
	Joint ventures	Ratio of joint ventures who received training on the code of conduct		0	0	0
Violation of laws and voluntary regulations on the health and safety impact of products and services		Number of violations	Cases	0	0	0
		Number of cases with fines or penalties	Cases	0	0	0
		Number of cases with warning	Cases	0	0	0
		Number of violations of voluntary regulations	Cases	0	0	0
Product and service information and labeling requirements		Number of products and services subject to information requirements and labeling	Units	0	0	0
		Total number of products and services	Units	0	0	0
		Ratio of products and services subject to information requirements and labeling	%	0	0	0
Violation of laws and voluntary regulations on product and service information and labeling		Number of violations	Cases	0	0	0
		Number of cases with fines or penalties	Cases	0	0	0
		Number of cases with warning	Cases	0	0	0
Violation of laws and voluntary regulations on marketing communication		Number of violations of voluntary regulations	Cases	0	0	0
		Number of violations	Cases	0	0	0
		Number of cases with fines or penalties	Cases	0	0	0
	Number of cases with warning	Cases	0	0	0	
	Number of violations of voluntary regulations	Cases	0	0	0	



# APPENDIX

- 75 Index: GRI, SASB, TCFD  
 80 Third Party Assurance Statement  
 82 Key Initiatives & Association Membership

## GRI

Classification	Index	Description	Page	Verification
Organizational Profile (102)	102-1	Name of the organization	9pg	V
	102-2	Activities, brands, products, and services	9, 12-13pg	V
	102-3	Location of headquarters	9pg	V
	102-4	Location of operations	11pg	V
	102-5	Ownership and legal form	9pg	V
	102-6	Markets served	11-13pg	V
	102-7	Scale of the organization	9, 11pg	V
	102-8	Information on employees and other workers	9, 69pg	V
	102-9	Supply chain	71pg	V
	102-10	Significant changes to the organization and its supply chain	About this Report	V
	102-11	Precautionary Principle or approach	56-57pg	V
	102-12	External initiatives	31, 82pg	V
	102-13	Membership of associations	82pg	V
Strategy (102)	102-14	Statement from senior decision-maker	4-5pg	V
	102-15	Key impacts, risks, and opportunities	28-29, 56pg	
Ethics and Integrity (102)	102-16	Values, principles, standards, and norms of behavior	54-55pg	V
	102-17	Mechanisms for advice and concerns about ethics	55pg	
Governance (102)	102-18	Governance structure	58pg	V
	102-20	Executive-level responsibility for economic, environmental, and social topics	21, 58pg	
	102-22	Composition of the highest governance body and its committees	58-59pg	V
	102-23	Chair of the highest governance body	58pg	
	102-24	Nominating and selecting the highest governance body	58pg	
	102-25	Conflicts of interest	58pg	
	102-26	Role of highest governance body in setting purpose, values, and strategy	21, 58pg	
	102-27	Collective knowledge of the highest governance body	58pg	V
	102-29	Identifying and managing economic, environmental, and social impacts	21, 58pg	
	102-30	Effectiveness of risk management processes	56pg	
	102-31	Review of economic, environmental, and social topics	21, 58pg	
	102-32	Highest governance body's role in sustainability reporting	21, 58pg	
102-33	Communicating critical concerns	21, 58pg		
102-34	Nature and total number of critical concerns	21, 58pg		
102-35	Remuneration policies	72pg	V	
102-36	Process for determining remuneration	72pg		
102-38	Annual total compensation ratio	72pg		
102-39	Percentage increase in annual total compensation ratio	72pg		
Stakeholder Engagement (102)	102-40	List of stakeholder groups	28-29pg	V
	102-41	Collective bargaining agreements	No employees subject to collective agreement	V
	102-42	Identifying and selecting stakeholders	28-29pg	V
	102-43	Approach to stakeholder engagement	28-29pg	V
102-44	Key topics and concerns raised	28-29pg	V	



Classification	Index	Description	Page	Verification
Reporting Practice (102)	102-45	Entities included in the consolidated financial statements	About this Report	V
	102-46	Defining report content and topic Boundaries	About this Report	V
	102-47	List of material topics	27pg	V
	102-48	Restatements of information	About this Report	V
	102-49	Changes in reporting	About this Report	V
	102-50	Reporting period	About this Report	V
	102-51	Date of most recent report	About this Report	V
	102-52	Reporting cycle	About this Report	V
	102-53	Contact point for questions regarding the report	About this Report	V
	102-54	Claims of reporting in accordance with the GRI Standards	About this Report	V
	102-55	GRI content index		V
Management Approach (103)	103-1	Explanation of the material topic and its Boundary	26-27pg	V
	103-2	The management approach and its components	28-29pg	V
	103-3	Evaluation of the management approach	-	V
Economic Performance (20)	201-1	Direct economic value generated and distributed	9, 63, 65pg	
Market Presence (202)	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	70pg	
	202-2	Proportion of senior management hired from the local community	71pg	
Procurement Practices (204)	204-1	Proportion of spending on local suppliers	71pg	
Anti-corruption (205)	205-2	Communication and training about anti-corruption policies and procedures	54-55pg	
	205-3	Confirmed incidents of corruption and actions taken	54-55pg	
Energy (302)	302-1	Energy consumption within the organization	65pg	V
	302-3	Energy intensity	65pg	V
	302-4	Reduction of energy consumption	32, 65pg	
	302-5	Reductions in energy requirements of products and services	65pg	
Water and Effluents (303)	303-1	Interactions with water as a shared resource	34-35pg	
	303-2	Management of water discharge-related impacts	34-35pg	
	303-3	Water withdrawal	66pg	
	303-4	Water discharge	66pg	
	303-5	Water consumption	66pg	
Biodiversity (304)	304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	68pg	
Emissions (305)	305-1	Direct (Scope 1) GHG emissions	66pg	V
	305-2	Energy indirect (Scope 2) GHG emissions	66pg	V
	305-4	GHG emissions intensity	66pg	
	305-5	Reduction of GHG emissions	66pg	V
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	36, 67pg	

\* Internal management indicators are not disclosed.

Classification	Index	Description	Page	Verification
Effluents and Waste (306))	306-1	Water discharge by quality and destination	35pg	
	306-2	Waste by type and disposal method	35pg	
	306-3	Significant spills	66pg	
	306-4	Transport of hazardous waste	35, 66-67pg	
	306-5	Water bodies affected by water discharges and/or runoff	35, 67pg	
Environmental Compliance (307)	307-1	Non-compliance with environmental laws and regulations	68pg	
Employment (401)	401-1	New employee hired and employee turnover	69pg	V
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	43pg	V
	401-3	Parental leave	70pg	V
Occupational Health and Safety (403)	403-1	Occupational health and safety management system	71pg	V
	403-2	Hazard identification, risk assessment, and incident investigation	44, 46pg	
	403-3	Occupational health services	46-47pg	V
	403-4	Worker participation, consultation, and communication on occupational health and safety	46-47pg	V
	403-5	Worker training on occupational health and safety	46-47pg	V
	403-6	Promotion of worker health	48pg	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	46-48pg	V
	403-8	Workers covered by an occupational health and safety management system	71pg	V
	403-9	Work-related injuries	70pg	V
	403-10	Work-related ill health	70pg	V
Training and Education (404)	404-2	Programs for upgrading employee skills and transition assistance programs	42pg	V
	404-3	Percentage of employees receiving regular performance and career development reviews	70pg	V
Diversity and Equal Opportunity (405)	405-1	Diversity of governance bodies and employees	69, 73pg	
	405-2	Ratio of basic salary and remuneration of women to men	71pg	
Non-discrimination (406)	406-1	Incidents of discrimination and corrective actions taken	39pg	
Human Rights Assessment (412)	412-1	Operations that have been subject to human rights reviews or impact assessments	38-39pg	V
	412-2	Employee training on human rights policies or procedures	38-39pg	V
Customer Health and Safety (416)	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	73pg	
Marketing and Labeling (417)	417-1	Requirements for product and service information and labeling	73pg	
	417-2	Incidents of non-compliance concerning product and service information and labeling	73pg	
	417-3	Incidents of non-compliance concerning marketing communications	73pg	
Customer Privacy (418)	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	71pg	



## TCFD

TCFD (Task Force on Climate-related Financial Disclosures), established by the FSB (Financial Stability Board), recommends disclosing information on response strategies, risk management, and governance for resolving the global climate crisis. ISU Chemical discloses relevant information in detail in this report according to the recommendations.

Classification	Category	TCFD Recommendation	ISU Chemical's Response
Governance	Qualitative	Process by which the board and/or board committees are informed about climate-related issues	21, 32pg
	Qualitative	Frequency by which the board and/or board committees are informed about climate-related issues	21, 32pg
	Qualitative	Whether the board and/or board committees consider climate-related issues when reviewing, guiding, and making business decisions	21, 32pg
	Qualitative	How the board monitors and oversees progress against goals and targets for addressing climate-related issues	21, 32pg
	Qualitative	Whether the organization has assigned climate-related responsibilities to management-level positions or committees	21, 32pg
	Qualitative	Whether the management positions or committees report to the board or a committee of the board and whether those responsibilities include assessing and/or managing climate-related issues	21, 32pg
	Qualitative	A description of the associated organizational structure	21, 32pg
	Qualitative	Processes by which management is informed about climate-related issues	21, 32pg
Strategy	Qualitative	How the organization's strategies might change to address potential climate-related risks and opportunities, taking into consideration the relevant short-, medium-, and long- term time horizons	32pg
Risk Management	Qualitative	Processes for assessing the potential size and scope of identified climate-related risks	32pg
	Qualitative	Processes for managing climate-related risks, including how the organization makes decisions to mitigate, transfer, accept, or control those risks	32pg
	Qualitative	Whether processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management	32, 56pg
Metrics and Targets	Quantitative	Metrics on climate-related risks associated with water, energy, land use, and waste management where relevant and applicable	65-68pg
	Quantitative	Direct GHG emissions (Scope 1)	66pg
	Quantitative	Indirect GHG emissions (Scope 2)	66pg

## SASB

Isu Chemical aims to provide useful information for decision-making of various stakeholders, including investors, by reporting activities and performance in accordance with industry-specific standards for sustainability issues developed by SASB (Sustainability Accounting Standards Board). This report was prepared in accordance with the chemicals industry standard in the Resource Transformation sector.

SASB Topic	Code	Category	Accounting Metric	ISU Chemical's Response
Greenhouse Gas Emissions	RT-CH-110a.1	Quantitative	Gross Scope 1 emissions	66pg
	RT-CH-110a.2	Qualitative	Long-term and short-term strategy to manage Scope 1 emissions and reduction targets	32pg
Air Quality	RT-CH-120a.1	Quantitative	NOx emissions	67pg
		Quantitative	SOx emissions	67pg
		Quantitative	VOC emissions	67pg
Energy Management	RT-CH-130a.1	Quantitative	Total energy consumed	65pg
		Quantitative	Percentage of grid electricity	65pg
		Quantitative	Percentage of renewable energy	65pg
Water Management	RT-CH-140a.1	Quantitative	Total water consumed	66pg
	RT-CH-140a.2	Quantitative	Number of incidents of non-compliance associated with water quality permits, standards, and regulations	66pg
Hazardous Waste Management	RT-CH-150a.1	Quantitative	Amount of hazardous waste generated	67-68pg
Community Relations	RT-CH-210a.1	Qualitative	Discussion of community engagement process	50-53pg
Workforce Health & Safety	RT-CH-320a.1	Quantitative	Total recordable incident rate (TRIR)	71pg
		Quantitative	Fatality rate for direct employees and contract employees	71pg
	RT-CH-320a.2	Qualitative	Long-term health risks of direct employees and contract employees	48pg

## Independent Assurance Statement

To readers of ISU Chemical Sustainability Report 2021

### Introduction

Korea Management Registrar (KMR) was commissioned by ISU Chemical to conduct an independent assurance of its Sustainability Report 2021 (the "Report"). The data and its presentation in the Report is the sole responsibility of the management of ISU Chemical. KMR's responsibility is to perform an assurance engagement as agreed upon in our agreement with ISU Chemical and issue an assurance statement.

### Scope and Standards

ISU Chemical described its sustainability performance and activities in the Report. Our Assurance Team carried out an assurance engagement in accordance with the AA1000AS v3 and KMR's assurance standard SRV1000. We are providing a Type1, moderate level assurance. We evaluated the adherence to the AA1000AP (2018) principles of inclusivity, materiality, responsiveness and impact. The opinion expressed in the Assurance Statement has been formed at the materiality of the professional judgment of our Assurance Team.

Confirmation that the Report was prepared in accordance with the Core Options of the GRI standards was included in the scope of the assurance. We have reviewed the topic-specific disclosures of standards which were identified in the materiality assessment process.

- GRI Sustainability Reporting Standards
- Universal standards
- Topic specific standards
  - Management approach of Topic Specific Standards
  - GRI 302: Energy
  - GRI 305: Emissions
  - GRI 401: Employment
  - GRI 403: Occupational Health and Safety
  - GRI 404: Training and Education
  - GRI 412: Human Rights Assessment

As for the reporting boundary, the engagement excludes the data and information of ISU Chemical's partners, suppliers and any third parties.

### KMR's Approach

To perform an assurance engagement within an agreed scope of assessment using the standards outlined above, our Assurance Team undertook the following activities as part of the engagement:

- reviewed the overall Report;
- reviewed materiality assessment methodology and the assessment report;
- evaluated sustainability strategies, performance data management system, and processes;
- interviewed people in charge of preparing the Report;
- reviewed the reliability of the Report's performance data and conducted data sampling;
- assessed the reliability of information using independent external sources such as Financial Supervisory Service's DART and public databases.

### Limitations and Recommendations

KMR's assurance engagement is based on the assumption that the data and information provided by ISU Chemical to us as part of our review are provided in good faith. Limited depth of evidence gathering including inquiry and analytical procedures and limited sampling at lower levels in the organization were applied. To address this, we referred to independent external sources such as DART and National Greenhouse Gas Management System (NGMS) and public databases to challenge the quality and reliability of the information provided.

### Conclusion and Opinion

Based on the document reviews and interviews, we had several discussions with ISU Chemical on the revision of the Report. We reviewed the Report's final version in order to make sure that our recommendations for improvement and revision have been reflected. Based on the work performed, it is our opinion that the Report applied the Core Option of the GRI Standards. Nothing comes to our attention to suggest that the Report was not prepared in accordance with the AA1000AP (2018) principles.

#### ■ Inclusivity

ISU Chemical has developed and maintained different stakeholder communication channels at all levels to announce and fulfill its responsibilities to the stakeholders. Nothing comes to our attention to suggest that there is a key stakeholder group left out in the process. The organization makes efforts to properly reflect opinions and expectations into its strategies.

#### ■ Materiality

ISU Chemical has a unique materiality assessment process to decide the impact of issues identified on its sustainability performance. We have not found any material topics left out in the process.

#### ■ Responsiveness

ISU Chemical prioritized material issues to provide a comprehensive, balanced report of performance, responses, and future plans regarding them. We did not find anything to suggest that data and information disclosed in the Report do not give a fair representation of ISU Chemical's actions.

#### ■ Impact

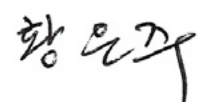
ISU Chemical identifies and monitors the direct and indirect impacts of material topics found through the materiality assessment, and quantifies such impacts as much as possible.

### Competence and Independence

KMR maintains a comprehensive system of quality control including documented policies and procedures in accordance with ISO/IEC 17021:2015 - Requirements for bodies providing audit and certification of management systems. This engagement was carried out by an independent team of sustainability assurance professionals. KMR has no other contract with ISU Chemical and did not provide any services to ISU Chemical that could compromise the independence of our work.

June 2022 Seoul, Korea



대표이사 



## Key Initiatives & Association Membership

1	The Federation of Korean Industries
2	Korea Petrochemical Industry Association
3	The Korean Institute of Chemical Engineers
4	Korea Listed Companies Association
5	RAL Quality Association PCM
6	Korea H2 Business Summit
7	Responsible Care
8	Korea International Trade Association
9	Overseas Agri-Development Service
10	Korea Association of Smart-Farm Industry
11	Korea Standards Association
12	Onsan Industrial Complex Environmental Management Association
13	Ulsan District Environmental Preservation Association
14	Petrochemical Environmental Management Working Committee
15	Ulsan Petrochemical Safety Management Committee
16	Korea Chemicals Management Association
17	Korea Fire Safety Institute



84, Sapyeong-daero, Seocho-gu, Seoul

Tel: +82-2-590-6600

Homepage: [www.isuchemical.com](http://www.isuchemical.com)