

2011

# SUSTAINABILITY REPORT

Healthcare & Earthcare



# About This Report

## Objective

This is the first Sustainability Report published by SK Chemicals in which the environmental aspect and the issue of sustainable management are comprehensively reported, following the publication of SK Chemicals Environmental Management Report in 2010. To fulfill its economic, environmental and social responsibilities, SK Chemicals is aggressively implementing sustainable management activities. This Report is intended to inform the stakeholders of the efforts and achievements of the company in sustainable management. SK Chemicals hopes to take the publication of this Sustainability Report as an opportunity to reach out and improve communication with stakeholders.

## Framework

This Sustainability Report is aligned to the Global Reporting Initiative (GRI) 3.1 Guidelines. The financial information for 2009 is based on individual financial statements, in accordance with the former accounting standard K-GAAP (Korean Generally Accepted Accounting Principles) whereas the financial information after 2009 is based on separate financial statements, in accordance with the current accounting standard K-IFRS (Korean International Financial Reporting Standards). SK Chemicals plans to publish its sustainability report annually in order to disclose its sustainable management goals and achievements and communicate with the stakeholders.

## Report Period

This report is based on the data and activities from January 1, 2009 to December 31, 2011. Some sections contain information going beyond the standard report period. The differences of the reported period in quantitative data are specified where necessary.

## Scope of Report

This report contains information of SK Chemicals corporate headquarters, research center and its four manufacturing sites in Korea. However, specific scope and units will be mentioned where necessary. The currency used in this report is Korean Won (KRW), and quantitative data will be listed in the metric system. All other units are specified where necessary.

## Verification

The contents of this report have been certified through a third party verification conducted by Korea Management Association Quality Assurance (KMAR) in April of 2012. The verification results are included on page 70 of this report.

## Contact

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The SK Chemicals 2011 Sustainability Report cover design is an e-expression of our mission statement: "We promote better health for all humankind, and protect the natural environment of the Earth."  
The cover illustration of the report, in which humans coexist hand in hand on a field of green grass, represents the efforts of SK Chemicals to achieve a sustainable society for the happiness of stakeholders.

# 2011 SUSTAINABILITY REPORT

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## CEO's Introductory Remarks



Choi Chang-won,  
CEO & Vice-Chairman, SK Chemicals

Remaining faithful to our motto, "Promote Better Health for Humankind, Protect the Natural Environment of the Earth," we at SK Chemicals continue to practice sustainable management aimed at increasing happiness for all of civilization and the planet by generating new values.

Society's sustainability is crucial to our happiness. It is growing increasingly difficult, however, to ensure sustainability due to the continuing environmental degradation amid the advancement of civilization and the growing inequalities resulting from excessive pursuit of material gains. At SK Chemicals, we recognize that our key task is to restore and ensure the symbiosis of civilization and nature, pioneering new ways to improve the quality of life for all, while also healing nature, outside and inside us.

SK Chemicals continues to engage in reforms at the levels of the individual, the family, the company, and society, with the aim of creating a more sustainable society. All our individual members are working hard to become "Warm Professionals," admired for both their competence and humanity. They are also actively trying to make their families happy as part of their transformation. Our concerted efforts also seek to make SK Chemicals a "Great Company," and make our society sustainable.

All businesses must strive to become "great". Great companies are the corporate citizens that ensure social sustainability by making active contributions to overcoming the problems of the environment and of the increasing socioeconomic inequalities. SK Chemicals, accordingly, organizes campaigns addressing both these issues that are crucial to our task of improving and ensuring the sustainability of our society.

At SK Chemicals, we have set innumerable examples of good environmental management, successfully reducing our environmental impact by improving energy efficiency. We adopted the Declaration for Environmental Management in 2009, announcing our resolve for systematic eco-friendly management that ensures better harmony between nature and humankind. We are united in constantly thinking about and developing new eco-friendly programs and campaigns, expanding an environment-centered culture throughout our organization. By minimizing our environmental impact through continuing process reforms, we were able to reduce our greenhouse gas emissions by 24% as of 2011. The proportion of revenue generated by our innovative eco-friendly products, such as our biodiesel and ECOZEN (an eco-friendly, heat-proof plastic), has grown to almost 18% of the total revenue we earned in 2011. Our new company building, ECO LAB, completed in 2011, embodies our commitment to environmental management, garnering a first-class energy efficiency grade, the highest level of the Green Building & Construction Certificate (GBCC), and the Platinum-level Leadership in Environmental Engineering and Design (LEED) certificate. This eco-friendly, innovative building has become a new landmark of the region.

“  
SK Chemicals  
continues to pioneer  
a more sustainable  
future.”



We are also dedicated to reducing social inequalities, serving as a primer by setting an example for other businesses and companies to emulate. SK Chemicals has become the corporate sponsor of Compassion, a non-governmental organization providing support for poor children around the world. We also promote the prosperity and welfare of rural regions in Korea by purchasing organic products directly from them. Our efforts to care for the needy and the struggling include the Silver Theater we have built for the elderly's enjoyment in South Korea and providing vaccines for children in North Korea. We also support the spread of creativity and talents throughout society by supporting and assisting artists as well as organizations devoted to arts and humanities, encouraging greater awareness and happiness.

At SK Chemicals, we intend to continue our contribution to sustainability by reinforcing our first-class programs and campaigns and actively restoring harmony and healing capacities to nature. To this end, we will continue to enhance our environmental management systems and share part of our disposable income to help mitigate social inequalities. In doing so, we intend our efforts to serve as a primer, inducing greater participation and support from other companies and businesses in the projects of our common causes. As we adopt a new attitude toward life and build a wider consensus across society for sustainability, we will be able to achieve our goal of restoring and maintaining the ecology of coexistence and harmony.

SK Chemicals publishes its sustainability reports to communicate better with stakeholders, updating stakeholders on the latest developments in all areas of the company's management. The 2011 Sustainability Report of SK Chemicals actively incorporated the demands and expectations from all stakeholder groups (including customers, investors, society, and employees), in accordance with the guideline provided by the Global Reporting Initiative (GRI) G3.1. In the report, the company also sought to disclose transparently how it practices the Ten Principles of the UN Global Compact. It is our hope at SK Chemicals that this elicits a better and greater public understanding of our company's practices and commitment to continuing sustainable management and also helps us hone and improve our internal capacities to achieve our sustainable ends. I ask you to continue to support us with your encouragement and attention as we make progress in sustainable management.

Thank you.

June 2012. 

# Communicating with Stakeholders

The corporate activities of a company affect the society and stakeholders in various ways. SK Chemicals is deeply aware of the fact that continuous engagement in the conversations, among the diverse groups of stakeholders affected by the company's products, services and other activities, is the first step toward contributing to sustainable development and management. In order to handle various problems and tasks for sustainability more effectively SK Chemicals seeks to better understand the expectations of the society and cooperate closely with all its stakeholders.

Main stakeholders in SK Chemicals include customers, shareholders and investors, government authorities, company employees and board members, business partners, local communities, the media and the press, industrial organizations and associations, and the academia. SK Chemicals intends to increase communication with all these groups through utilizing various channels. The criteria for identifying and evaluating the stakeholders in SK Chemicals can be answered by these questions: "Who is affected by our business activities?" "Who influences our sustainable management and its related activities?" and "Who benchmarks the achievements of SK Chemicals' sustainable management in their decision making?". SK Chemicals understands its stakeholders through asking these questions, and with the identified stakeholders, aims to develop its sustainable management

# Materiality Evaluation

## Overview

This Sustainability Report is not only a crucial medium, which transparently reveals the efforts and achievements of SK Chemicals in the area of sustainable management but is also a basic tool of communication with the company's stakeholders. In order for this Report to fulfill its role as a communication tool, it is necessary to provide information explaining the relationship between SK Chemicals and sustainability. To publish its Sustainability Report, SK Chemicals conducted its materiality evaluation, which determined the types and combinations of information necessary to achieve its goals. The "material issues" in sustainable management include not only issues that are important for the management of SK Chemicals, but also issues that matter from perspective of the stakeholders. Therefore, in order to determine the important information, it is necessary to identify issues that interest stakeholders; and analyze their degree of importance in the management of the company and the differences of awareness between the stakeholders and the management on an any given issue.

While conducting its materiality evaluation, SK Chemicals paid significant attention to GRI 3.1's Technical Protocol, "Applying the Report Content Principles." As the principles of evaluation, GRI 3.1 suggests completeness, sustainability context, materiality, and stakeholder inclusiveness. It also recommends that the materiality evaluation proceed in the stages of identification, prioritization, and the validation of the chosen issues.

### Stages of Materiality Evaluation



### Result



## Interpreting the Results

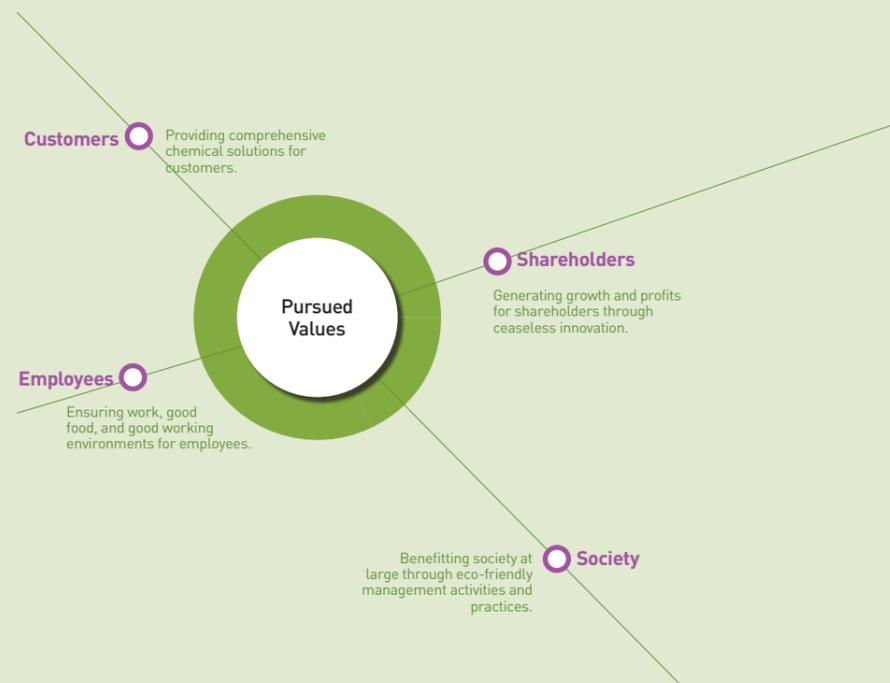
All 34 issues identified in the materiality evaluation are significantly relevant to the sustainable management of SK Chemicals. Among the issues, "product responsibility," "developing eco-friendly materials," "customer service and resolving complaints," "developing alternative energy," "sustainable management strategies," "energy efficiency," "managing hazardous substances," "human resources development," "anti-corruption," "fair trade," "industrial safety and public health," and "reducing resource consumption" were identified as more important issues. See the diagram above for a more detailed look into the materiality evaluation results. See the diagram above for a more detailed look into the materiality evaluation.

While all identified issues are relevant and important to SK Chemicals, they were categorized into "Priority I," "Priority II," and "Priority III" groups according to their priority. The categorization indicates the need to strategically concentrate on the relatively more important issues (issues located on top right hand side of the diagram). The relative ranking of these issues depending on their priority is reflected not only in the structure of this report, but also in the scope and period of information included in this report.

To comprehensively reflect the opinions of various stakeholders, averages were used to calculate the materiality. However, SK Chemicals is aware of the significance of an issue that is of great importance to some but not to others in the overall context of its sustainable management, and will take them into account in pursuing sustainable management and producing its Sustainability Reports.

# Company Overview

**“We promote better health for all humankind, and protect the natural environment of the Earth.”**



## HISTORY



Since beginning as "Sunkyong Chemical Fibers" in 1969, SK Chemicals has become one of companies that represent Korea through continuous evolution and innovation. Since 2000, SK Chemicals has established its vision, centered around "green chemical businesses" and "life science businesses," and has been actively pioneering and developing new sources of future growth.

As part of the pursuit of its "green chemical businesses," SK Chemicals has developed and is producing polyurethane resins, polyester glues, and other key chemical components based on its accumulated chemical technology, and is expanding its business portfolio into eco-friendly alternative materials and the highly-functional PETG resin.

In following its vision in "life science businesses," SK Chemicals has developed and produced three new drugs: SUNPLA®, Korea's first new drug for cancer; Joins®, the first all-natural ingredient drug; and Mvix®, Korea's leading erectile dysfunction treatment. SK Chemicals is continuing to diversify its product portfolio by expanding its business into producing blood components and vaccines.

SK Chemicals is also actively researching and developing various all-natural and biotechnology pharmaceutical products, including treatments for dementia and diabetes. It will continue to innovate itself to become a total healthcare company that contributes to the public health and the quality of life.

## Mission Statement

With the mission statement, "We promote better health for all humankind, and protect the natural environment of the Earth," SK Chemicals is concentrating its business efforts into the restructured Green Chemical and Life Science Divisions.

### Cure and Treatment

#### We make the world healthy

Our goal is to make the world healthier and better by providing humankind with necessary medicines and cures.

### Environmental Protection

#### We protect the Earth

Our eco-friendly materials are excellent alternatives to conventional petrochemical products and help to preserve the natural environment.

HEALTH

ENVIRONMENT



### Prevention and Management

#### We safeguard lives

Our vaccines and "New Healthcare" regimens provide innovative solutions necessary to prevent diseases and manage health.

### Energy Efficiency

#### We prevent the depletion of fossil fuels

Our complex materials and energy storage technology, made lighter and better renewable, minimize depletion of fossil fuel reserves.

LIFE

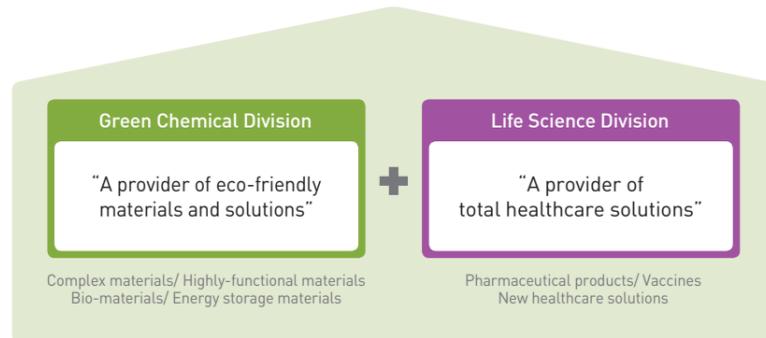
RESOURCES

**"Healthcare Earthcare"**

## Vision

The guiding vision of SK Chemicals in all its activities is to become “a global leading company and provider of eco-friendly materials and total healthcare solutions.” To realize this vision, it has established the following goals for different areas of its businesses:

### Becoming a Global Leading Company and Provider of Eco-friendly Materials and Total Healthcare Solutions



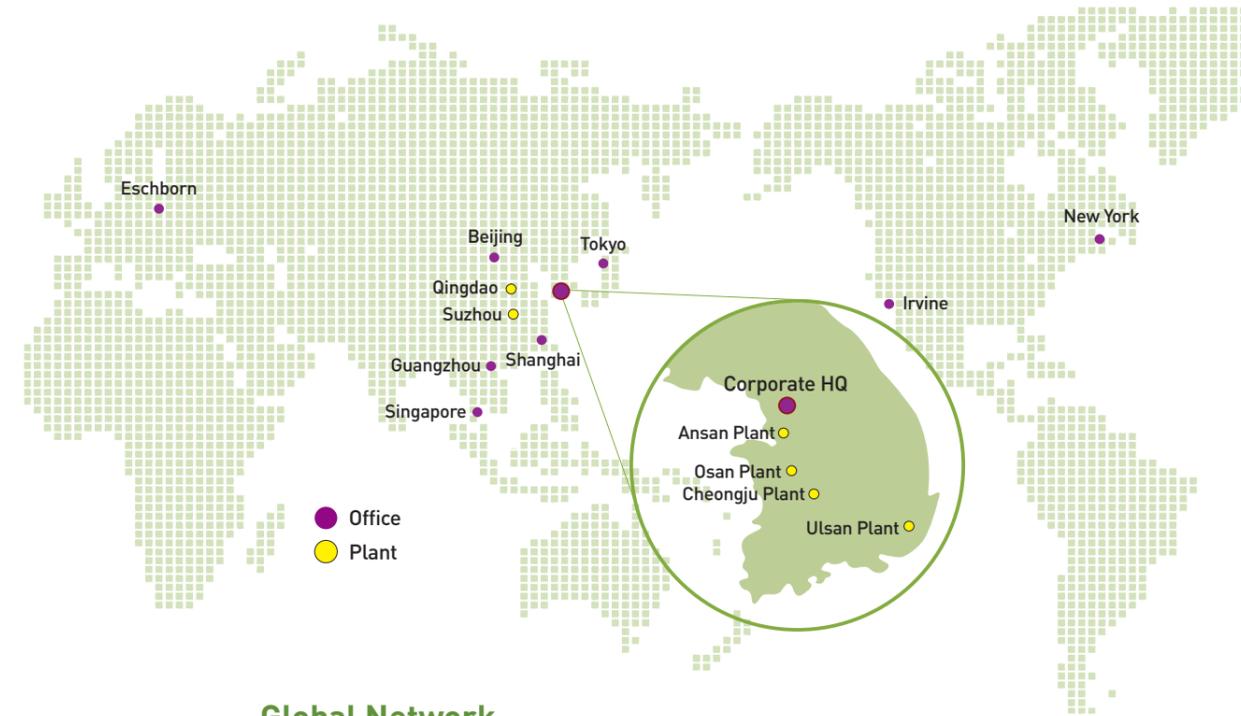
### Green Chemical Division: Becoming a Provider of Eco-friendly Materials and Solutions

To become a provider of environmentally friendly materials, SK Chemicals Green Chemical Division is producing various quality environmentally friendly chemicals and marketing them worldwide, as well as pioneering new sources of growth in four major categories: developing composite materials, highly-functional materials, bio-materials, and energy storage materials, on the basis of its technological expertise.

### Life Science Division: Becoming a Provider of Total Healthcare Solutions

Boasting broad and diverse portfolio of products, SK Chemicals Life Sciences Division seeks to become a total healthcare solution provider on the basis of its success in the Korean market by increasing its investment into vaccine business as well as developing new drugs, and bringing its medical solutions worldwide.

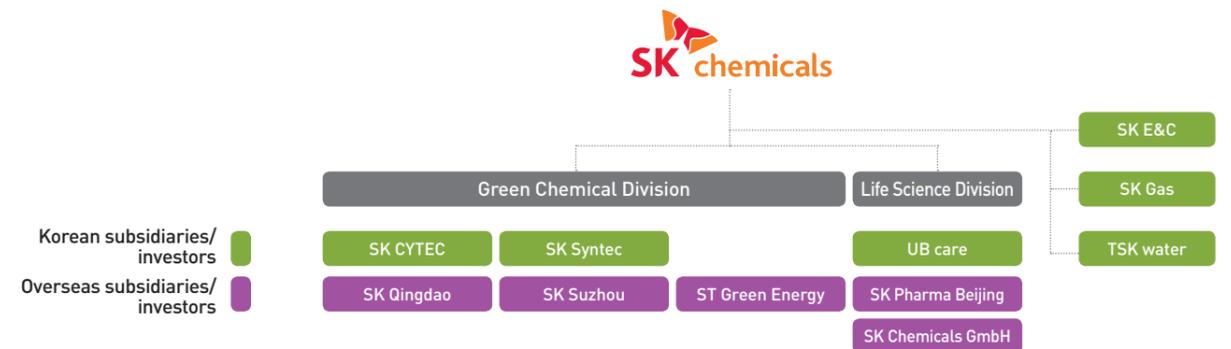
Areas of Businesses	Green Chemical Division	Life Science Division
	(1) PET resins (2) Highly-functional PETG resins (3) Carbon fiber prepreg (4) Polyester resins for glues (5) High-concentrate solvents/ display pixel materials/ super-capable capacitor electrolytes (6) Automobile materials and chemicals (7) Industrial disinfectants/ water treatments (8) Eco-friendly, bio-energy	(1) Synthetic drugs (2) Natural ingredient drugs (3) Drug delivery systems (4) Vaccines (5) New healthcare solutions



## Global Network

In Korea, SK Chemicals has its headquarters in Pangyo and four of its plants in Ulsan, Ansan, Osan, and Cheongju. The Ulsan plant specializes in the production of green chemicals, while the other three plants are responsible for producing life science products. In addition, SK Chemicals operates plants in Suzhou and Qingdao in China, and regional offices around the world including China, Germany, Singapore, and the United States.

### Subsidiary and Investor Companies

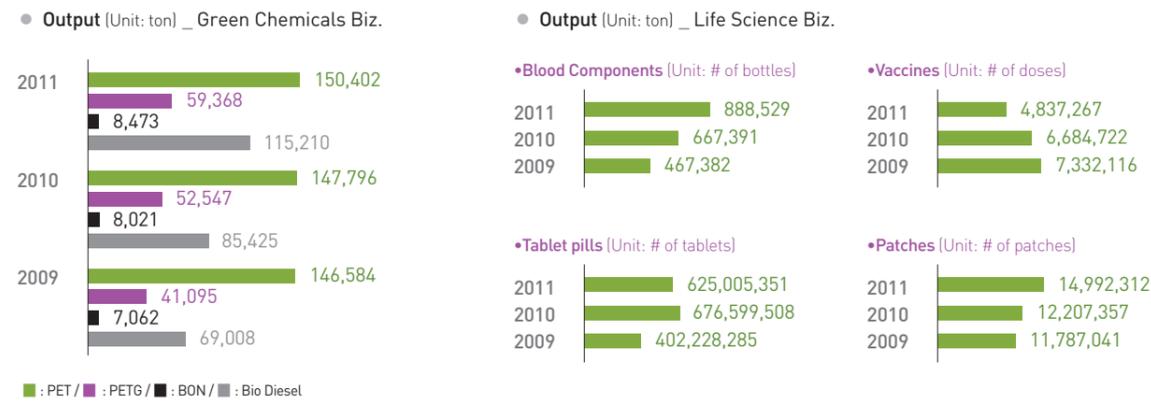
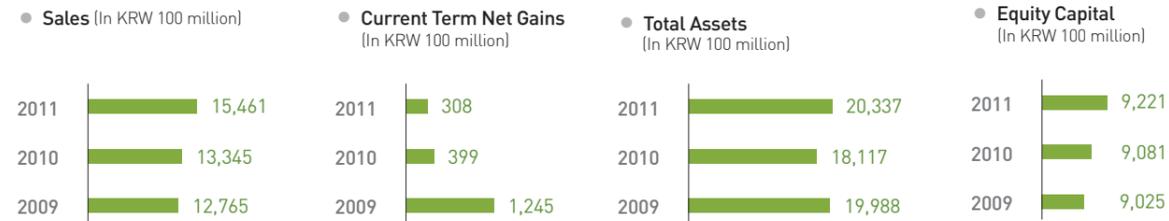


### Major Shareholders (as of Dec. 31, 2011)

Shareholder	No. of Shares Owned			Ordinary Stock Ratio
	Ordinary	Preferred	Total	
Choi Chang-won, et al.	2,887,199	100,350	2,987,549	13.85%
National Pension	1,953,356	-	1,953,356	9.37%
Mirae Asset Investment Management	1,619,508	-	1,619,508	7.77%

## Generating Economic Values and Sharing Them with Shareholders

In 2011, despite the global economic downturn, SK Chemicals succeeded in generating KRW 1.55 trillion in annual sales, exceeding its original target by almost 10%. While the challenging and uncertain global economic conditions are expected, due to the financial crisis in Europe and the economic recession in the United States and the political landscape in Korea, SK Chemicals has raised its sales target by 10% from the previous year and intends to generate a total sales of KRW 1.6279 trillion in 2012.



### Sharing Values with Stakeholders

(in KRW 1 million)

Stakeholder Group	Item	2009	2010	2011
Shareholders	Dividends	10,531	10,353	8,310
Creditors	Interest costs	47,000	22,116	30,187
Partner businesses	Material and manpower purchases	673,627	694,368	906,967
Employees	Wages and rewards	89,796	86,541	92,072
	Retirement pension	10,367	7,504	8,444
	Fringe benefits	13,312	15,307	17,245
Local communities	Charity work	20,298	10,366	1,082
Government	Income taxes	28,728	-2,215	992

\*SK Chemicals provides a defined benefit retirement pension scheme. As of the end of 2011, the company had KRW 63 billion in the retirement pension provisions, KRW 45.2 billion in the unemployment insurance deposit, KRW 500 million converted into the National Pension, and an outside-company deposit ratio of 72.46%.

### Support from the Government

(in KRW 1 million)

Type	2009	2010	2011
Tax deductions/ exemptions	11,716	10,939	10,411
Investment/ research subsidies	1,716	2,249	4,716
Rewards	N/A	N/A	N/A

## Board of Directors

In order to ensure the autonomy of the Board of Directors and protect rights of the shareholders, SK Chemicals continues to improve its corporate governance structure. In particular, the company has more non-executive directors than executive directors in order to strengthen the monitoring capacities of the Board. By placing these non-executive directors in central roles on various internal committees, including the Audit Committee and the Non-executive Director Nomination Committee, SK Chemicals makes non-executive directors the centerpiece of its Board.

The Board at SK Chemicals consists of four independent, non-executive directors and three internal directors from the company. The Shareholders' Assembly determines the appointment of the internal directors. The Non-executive Director Nomination Committee reviews the qualifications and nominates candidates with focus on their professional merit including management and legal expertise. The Shareholders' Assembly retains the final right to determine whether or not to appoint the nominees.

In convening each Board meeting, the Board compiles and reviews the issues for agenda and other reports, and notifies each member of the convention at least five days prior to the scheduled date. Each Board meeting commences with the opening declaration and closes with the closing declaration by the Chairperson. Proceedings are kept for each Board meeting, and written resolutions are kept when necessary and announced after each meeting. In 2011, the Board thoroughly reviewed and deliberated upon all the major issues brought to its attention, and commissioned reports on the current status of the domestic and international economic environments as well as countermeasures to them. A total of 12 Board meetings were convened throughout the year, with an average attendance rate of 86.1% among the internal directors and 85.4% among the non-executive directors.

SK Chemicals' Board always reserves majority of its seats for non-executive directors in order to ensure the transparency of its activities. It also actively hosts and organizes the Audit Committee, comprised entirely of non-executive directors, in an effort to prevent the company from engaging in any wrongdoings or corrupt practices.

Type	Members	
	Board	Internal
	Non-executive	Kang Bo-hyeon, Kang Ho-sang, Heo Gi-ho, Kwon Tae-shin
Audit Committee		Kang Bo-hyeon, Kang-Ho-sang, Kwon Tae-shin (all non-executive)
Non-executive Director Nomination Committee		Kim Chang-geun (internal), Kang Bo-hyeon, Kang Ho-sang, Kwon Tae-shin (non-executives)
Management Committee		Kim Chang-geun, Lee In-seok (both internal)

[As of Dec. 31, 2011]



<b>Choi Chang-won:</b> Chairperson of the Company and the Board	<b>Kim Chang-geun:</b> Chief Executive Officer	<b>Lee In-seok:</b> Chief Executive Officer/ Life Science Division	<b>Kang Bo-hyeon:</b> Member on the Audit Committee and the Non-executive Director Nomination Committee	<b>Kang Ho-sang:</b> Member on the Audit Committee and the Non-executive Director Nomination Committee	<b>Kwon Tae-shin:</b> Member on the Audit Committee and the Non-executive Director Nomination Committee	<b>Heo Gi-ho:</b> Non-executive Director
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A photograph of three business professionals in a meeting. A man in a light blue suit is writing on a whiteboard with a white marker. A woman with blonde hair and a man with dark hair are looking at the whiteboard. The whiteboard has some faint lines and a scribble on it. The background is a bright, modern office setting.

## Systems for **Sustainable Management**

Sustainable management at SK Chemicals has its ultimate aim in satisfying stakeholders' expectations and social demands. SK Chemicals continues to perfect its systems for sustainable management into a well-ordered mosaic to achieve harmony and optimization in its endeavors.

# 1. Systems for Sustainable Management

- Vision for Sustainable Management
- Strategy for Sustainable Management
- Organization for Sustainable Management
- Crisis Management System
- Environmental Management System
- Human Rights Management System
- Ethical Management System
- Fair Trade

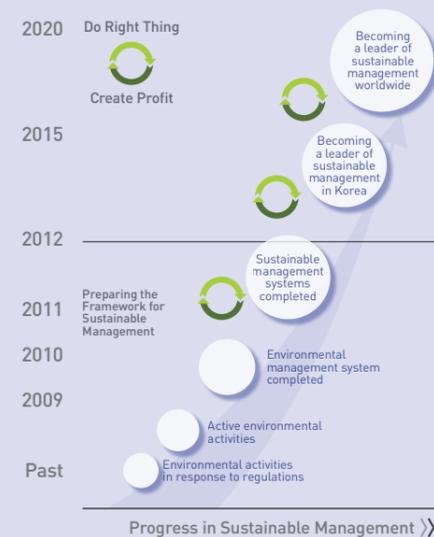
## Vision for Sustainable Management

The mission statement and overarching vision of SK Chemicals reflect the company's staunch commitment to sustainable management. Following its mission of promoting better health for all humankind and protecting the natural environment of the Earth, SK Chemicals continues to generate new sustainable values by developing and providing eco-friendly materials and total healthcare solutions. By actively incorporating and satisfying social expectations and stakeholders' demands for sustainability in all its business activities, SK Chemicals will fulfill its social responsibilities as a corporate citizen of our community. To this end, SK Chemicals recognizes the necessity of improving our own and the public's understanding of company's products, activities, services, and impact on the environment. The enhanced understanding and knowledge will help the company achieve a positive cycle of management in which doing the right thing leads to profits. This will enable SK Chemicals to become a global leader in sustainable management of environmental, social, and economic aspects.

### Vision

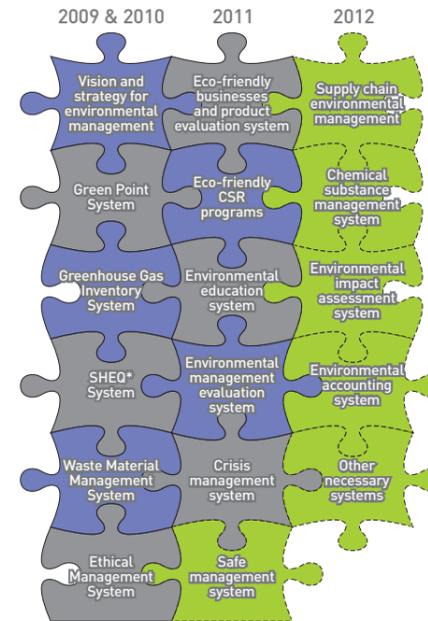
"Becoming a Global Leading Company with Sustainable Management in Environmental, Social, and Economic Aspects"

### SK Chemicals' Sustainable Management Roadmap



## Strategy for Sustainable Management

### Mosaic of Systems for Sustainable Management at SK Chemicals



**SHEQ\*** [Safety Health Environment Quality] : a system that integrates the management of all safety, health, environment, and quality-related issues in production.

### Adopting DJSI Korea

SK Chemicals has adopted the Dow Jones Sustainability Indexes (DJSI) in order to assess its activities on sustainable management more objectively and bring itself closer to the worldwide trend. Co-developed by Dow Jones, the world's largest financial information company based in the United States, and SAM, a world-renowned asset management company based in Switzerland, the DJSI provide international standards on sustainable management. The DJSI are widely recognized around the globe as authoritative indicators of the economic, environmental, and social values of many companies' sustainable activities. They thus provide important information for making decisions that concern corporate investments. For two years in a row since 2010, SK Chemicals has been named as part of \*DJSI Korea.

\*DJSI Korea: The world's first sustainability indexes developed for a particular nation, co-developed by the DJSI and the Korea Productivity Center.

SK Chemicals continues its efforts to create a more sustainable future by pursuing its mission of "promoting better health for humankind and protecting the natural environment of the Earth." SK Chemicals believes that the key to creating a sustainable future society lies with enabling well-rounded individuals with potentials to create a happy family and an excellent company. However, the challenges of environmental degradation and growing economic inequality must be met in our pursuit of greater sustainability. Companies should bear the responsibility, as they have led the economic system of mass production and consumption, and provide solutions based on the accumulated technologies and capital they have secured in their business activities. SK Chemicals actively pursues environmentally friendly management to tackle environmental challenges as well as the SK Group philosophy of human oriented, and participates in social actions to tackle the inequalities.

SK Chemicals will achieve growth through innovation and creation while adhering to its principle. In pursuing growth, SK Chemicals will not only seek quantitative growth and expansion, but also qualitative growth, including the development of the inner self to increase one's capability and character and having a strong sense of community and communication to combat the social inequalities. By pursuing these values, SK Chemicals continues its commitment to environmental management, mutual growth, community service and engagement, and sharing happiness, while strengthening its capacity to conduct ethical and risk management.

Our environmental management system will consist of the three core pillars: Green Culture, Green Process, and Green Products, which will provide environmental management processes company-wide.

As for mutual growth, SK Chemicals will promote solidarity with our partner businesses while facilitating the development of their competence and competitiveness. The goal is not just in developing a sense of intimacy, but fostering a tangible ecosystem in which everyone wins.

Furthermore, SK Chemicals seeks to increase its participation and involvement in the community by not only providing its employees but their family members numerous opportunities to participate in our community service projects.

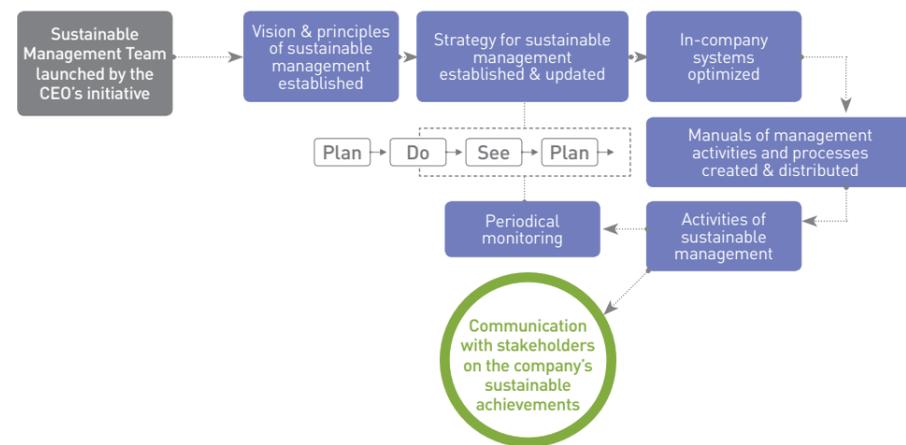
Lastly, SK Chemicals strives to share happiness to develop a symbiotic ecosystem by being aware of the fact that sharing happiness improves the quality of life for the employees and excessive greed is dangerous in the effort towards sustainability.

The systems for sustainable management at SK Chemicals optimizes existing internal system in accordance with the changes in the management environment and the demands of the stakeholders, as well as creating new systems to augment any shortcomings. SK Chemicals is also working to integrate its exemplary systems in its individual plants and offices across the entire company.

## Organization for Sustainable Management

In January 2011, SK Chemicals launched a new organization within the company to exclusively handle sustainable management by leading, helping, and checking sustainable management activities across the company. The company has also appointed officers in charge of sustainable management at its four plants in Korea (Ulsan, Ansan, Osan, and Cheongju) to maintain channels of communication between the headquarters and the production sites regarding plant activities. The Sustainable Management Team identifies and analyzes changes and trends in the industry, helping to shape and lead new objectives for the company's sustainable management. It also facilitates interdepartmental cooperation on sustainable goals, and serves to communicate the company's achievements in sustainable management to its employees and the public.

Flowchart of Activities and Processes within the Sustainable Management Team



## Crisis Management System

SK Chemicals operates a crisis management system that enables the company to identify in advance the various risks implicit in the rapidly changing business environment and to react rapidly to an actual crisis. Effective operation of this system involves maintaining organic ties of cooperation with the various departments (finances, strategy, legal affairs, public relations, and environmental safety, etc) under the guidance of the Crisis Management Team for comprehensive analysis and management of crises and establishing countermeasures.

In order to ensure integration of different risks and analyses, the lead crisis management department must identify the scope and management priorities, and disseminate those using specified formats. The officers at each department responsible for crisis management have an obligation to analyze and develop countermeasures for the risks and crises facing their department. The main department responsible for crisis management is also in charge of collecting and reviewing information on each department's crisis management processes, with the goal of minimizing possible repercussions and allowing for efficient and effective countermeasures where necessary.

### SK Chemicals' Crisis Management System

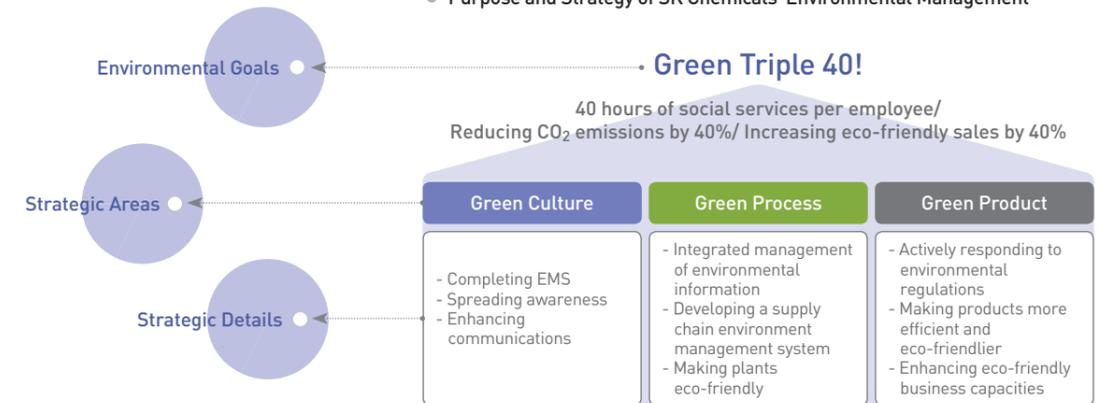


## Environmental Management System

### Objective and Strategy

Environmental management at SK Chemicals aims to achieve the Green Triple 40 goals, setting and meeting strategic targets in three areas: "Green Culture," "Green Processes," and "Green Products." These strategic areas involve establishing a green corporate culture by spreading greater awareness of the need for environmental management; making all plants environmentally friendlier by improving processes of environmental management; and enhancing the company's eco-friendly business capacities by developing and planning new eco-friendly businesses and products. SK Chemicals thereby pursues green, sustainable growth while minimizing its environmental impacts during manufacturing processes and other business activities, as well as actively promoting environmental preservation.

### Purpose and Strategy of SK Chemicals' Environmental Management



### Major Tasks and Achievements of Environmental Management in 2011

2011 Tasks	Goals and Targets	Achievements
<b>Green Culture</b> "Restoring the Environment, Increasing Happiness"	- Publishing the Environment Report - Making each employee perform five hours of eco-friendly social services - Gaining 900,000 Green Points - Completing the eco-friendly technology monitoring system at the Eco Lab	- The Environment Report published - Each employee performed 1.4 hours (avg.) of eco-friendly services - 1,430,000 Green Points earned - The eco-friendly technology monitoring system at the Eco Lab completed
<b>Green Process</b> "Zero Reliance on Fossil Fuels"	- Submitting detailed plan as part of the Greenhouse Gas and Energy Target Management System - Replacing 32% of fossil fuels for the Ulsan plant with alternative energy - Completing the new eco-friendly plant (at Andong, certified with LEED) - Completing the Green Partnership System	- Detailed plan on the Greenhouse Gas and Energy Target Management System submitted - 27% of fossil fuels used at the Ulsan Plant replaced with alternative energy - The eco-friendly plant at Andong completed [application for LEED in process] - Green Partnership System completed
<b>Green Product</b> "Developing Eco-friendly Materials and Solutions"	- Establishing the Eco-friendliness Assessment System (for business projects and products) - Following up with the latest regulations and certifications in Korea and abroad	- Eco-friendliness Assessment System (for business projects and products) established - The latest regulations and certifications in Korea and abroad followed up
<b>External Validation</b> "Ensuring the Highest Levels of External Validation and Assessments"	- Acquiring the 'AA' rating with SRI - Maintaining relations with DJSI Korea - Winning the CDP Special Award - Winning other awards for environmental management	- 'A' rating with SRI acquired - Relations with DJSI Korea maintained - CDP Special Award won (for "Companies with Exemplary Improvement Records") - Other awards for environmental management won (Korea Ethical Management Grand Prize for Environmental Management, Global Green Management Grand Prize)

## ISO 14001 (Environmental Management System) Certification

In 2005, the Ulsan plant, which manufactures over 90% of all the output of SK Chemicals (in terms of weight), received ISO 14001 certification, the international standard for environmental management systems. By complying with the international environmental management standard and systemically developing programs for environmental risk prevention, risk assessment and training, Ulsan plant is continuously improving its environmental management system. SK Chemicals conducts periodical internal assessments of its environmental management progress. It monitors the status of operations through on-site environmental tests, and ensures timely maintenance and improvement can take place.

## Green Partnership with SONY

SK Chemicals was certified as a SONY Green Partner in 2009 after its products and environmental management systems met the requirements of SONY's Green Partner. The certification is granted only after thorough and systematic monitoring of all manufacturing processes, ranging from the purchase of raw materials to the output of finished products from the warehouse. The certificate indicated that SK Chemicals' environmental management level satisfied SONY's international standard.

▶  
SONY Green Partner Certificate



## Organization for Environmental Management

Since 2000, SK Chemicals has been operating its Environmental Management Committee. Part of this Committee overseeing the sustainable management includes a Project Management Officer (PMO) who oversees the entire company, as well as other PMOs responsible for sustainable projects at each office or plant. The PMOs have conducted monthly meetings to update one another on the current status and importance of environmental issues facing each plant or office as a part of the effort to bring environmental management. In 2012, SK Chemicals has launched the Sustainable Management Committee, which oversees the activity of the Environmental Management Committee.

### ● Parts and Roles on the Environmental Management Committee

Part	PMO	Subordinate Employees
<b>Key Role</b>	- Leading by example in the areas of attention, encouragement, and practice	- Serving the same role as the Environmental Management Team at each plant/office
<b>Culture</b>	- Internal and public relations - Encouraging Board members to carry out activities for the environment - Organizing and overseeing CSR programs	- Ensuring that the goals of environmental management are put into practice at respective plants/offices (by maintaining close ties with the respective environmental management departments) - Communicating with local communities - Training employees
<b>Process</b>	- Checking compliance with rules/regulations on manufacturing - Developing inventory and confirmation processes - Supervising efforts to meet environmental targets (i.e., regarding greenhouse gas reduction and energy saving)	- Complying with legislations on low-carbon, sustainable growth - Developing and confirming greenhouse gas inventory systems - Managing environmental achievements at respective plants/offices
<b>Product</b>	- Suggesting environmental goals and directions for new projects - Communicating product-related regulations and systems to employees	- Compiling data and information on carbon emission rights - Complying with product-related regulations - Researching and sharing environment-related information on new projects

## Environmental Education and Training

In order to increase employees' awareness of environmental management and enhance their capacities for practice, SK Chemicals provides a series of programs for environmental education and training. They can be roughly divided into three levels depending on the breadth and depth of the contents they cover, i.e., introductory, common, and level-up. The introductory course usually targets the newly hired, informing them of the basic concepts and need for environmental management and the company's overarching vision and major achievements in that area. The common course shares special and urgent issues of environmental management with all employees throughout the company, encouraging them to discuss and participate. The level-up courses, often targeting specific groups or ranks of employees, share the latest information on environmental management in Korea and abroad, recruiting and developing experts. This system leads employees to internalize SK Chemicals' green culture, and enhances their individual roles and practices related to green processes and products.

### ● Progress in Environmental Education and Training, 2011

Level	Course	Duration	Description
<b>Introductory</b>	<b>Environmental Management Education for New Employees</b>	<b>6h</b>	- Provided as part of the group training program for new employees, held twice a year - Also provided as part of the training program for newly hired experienced employees
		<b>2h</b>	- Special lecture by an invited guest speaker, and the screening of a relevant film/video - Checking offline and online attendance rates
<b>Common</b>	<b>Special Lecture on Sustainable Management</b>	<b>4h</b>	- Attending expositions on international environmental regulations
		<b>4h</b>	- Attending a seminar on greenhouse gas reduction certification
		<b>16h</b>	- Attending classes for experts on managing greenhouse gas and energy targets
		<b>4h</b>	- ISO 26000
		<b>8h</b>	- Workshops with experts and responsible officers
<b>Level-up</b>	<b>Intensive Programs for Experts</b>	<b>4h</b>	- Attending expositions on international environmental regulations
		<b>4h</b>	- Attending a seminar on greenhouse gas reduction certification
		<b>16h</b>	- Attending classes for experts on managing greenhouse gas and energy targets
		<b>4h</b>	- ISO 26000
	<b>Spreading Knowledge</b>	<b>8h</b>	- Workshops with experts and responsible officers

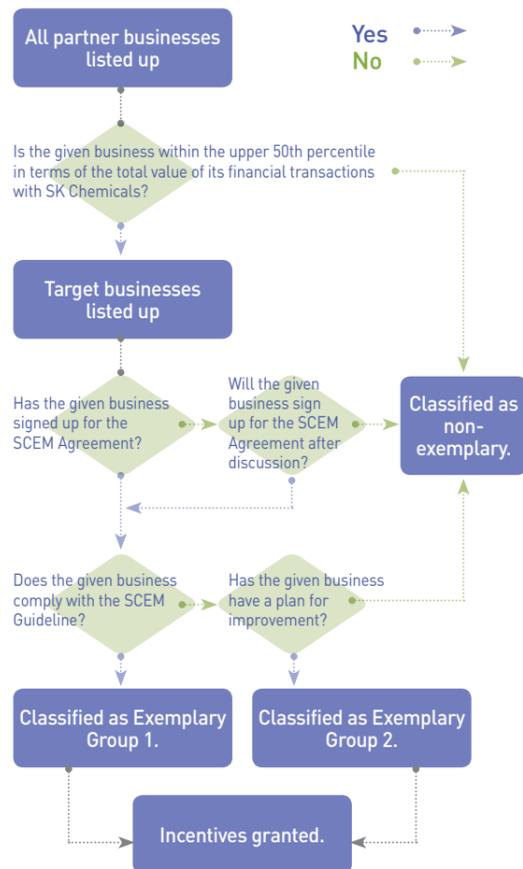
## Integrated Environmental Information Management System

For more efficient management and utilization of environmental information available throughout the company, SK Chemicals has integrated various information systems within the company, and developed the Integrated Environmental Information Management System to enable sharing of information between its plants and offices. The system includes data on all activities of production and operation, including product output, raw and intermediate materials usage, energy and water consumption, waste material generation, pollutants emissions, and more. At present, the system can be accessed with ease on the Web. After inputting data in the administrator's mode, the responsible officer at each plant will be able to view various charts, graphs, and other forms of data by year or by location. Interfaced with other IT devices and systems in the future, this system will provide automatic financial analyses and updates on environmental safety and greenhouse gas inventories as well.

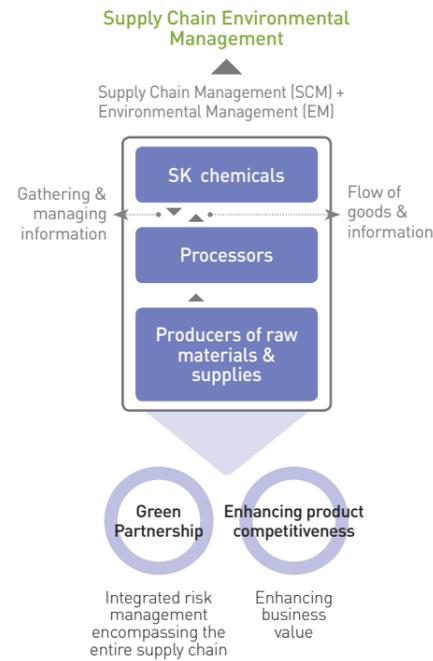
## Supply Chain Environmental Management (SCEM)

The environmental activities of partner businesses significantly affect the environmental achievements of SK Chemicals and its products throughout the entire process. SK Chemicals is deeply aware of the importance of providing effective environmental leadership for its partner businesses in sustainability from the perspective of the social responsibility. In acknowledgement of the need for providing principled policies and targets of environmental management in its dealings with partner businesses, SK Chemicals has set up the Supply Chain Environmental Management (SCEM) system, which is to be completed by 2012. To this end, the company spent 2011 on defining the scope of partner businesses and their environmental activities involved in the SCEM and designing the basic processes and systems. The first phase of the project will target the upper half of the partner businesses regarding financial transactions amounts with SK Chemicals. These companies will be given the SCEM Guideline for Partner Businesses and will be required to submit their plans on practicing and complying with the terms of the Guideline. SK Chemicals will then review the submitted plans to determine "exemplary partner businesses," encouraging them and other businesses to continue on with their good work with various incentives, the specifics of which are yet to be developed. The SCEM project will proceed from phase to phase, with the scope of partner businesses in the project increasing year by year. SK Chemicals will use environmental management as an opportunity to strengthen mutually beneficial relationships with its partner businesses, and encourage them to become eco-friendlier by giving greater preference to eco-friendly materials and purchases.

### ● Draft of the Process of Selecting Exemplary SCEM Partner Businesses



### ● Conceptual Map of SK Chemicals' SCEM Process



### ● Major Provisions in SK Chemicals' Human Rights Policy

Category	Provision	Description
General	1. Supporting the protection of human rights	Doing one's part in supporting the protection of human rights and preventing their violations
Anti-Discrimination	2. Prohibiting employment-related discriminations	On the basis of sex, religion, status of employment, etc.
Ensuring Employees' Health and Safety	3. Individual safety rights	Prohibiting pressure and coercion, whether physical or psychological/ respecting privacy
	4. Safety devices	Developing complaint-handling procedures, etc.
	5. Safety practices	Maintaining standards and policies on ensuring safety and security
Labor	6. Freedom of collective bargaining	Upholding the right to form unions, participate in collective bargaining, etc.
	7. Prohibiting forced labor	Prohibiting all forms of forced labor
	8. Prohibiting child labor	Abolishing child labor/ protecting women and underage persons
	9. Industrial safety and health	Managing risk factors/ preventing accidents and diseases/ providing training
	10. Continuing employment	Avoiding unnecessary structural readjustments or layoffs/ guaranteeing retirement age (except in special circumstances)
	11. Appropriate remuneration	Guaranteeing appropriate levels of remuneration/ complying with the minimum wage requirement
	12. Working hours and rest	Complying with the industrial standard on working hours/ limiting overtime
	13. Fringe benefits and welfare	Ensuring benefits and welfare for employees and their family members
	14. Training and education	Providing education and training to help enhance employees' competence and capacities
	Partner Businesses	15. Human rights at partner businesses
Local Community	16. Upholding human rights in local communities	Creating jobs for locals/ protecting locals' right of residence and safety
Preventing Corruption	17. Duty to prevent corruption	Abolishing improper earnings and profits/ making efforts to stop bribery
Government	18. Respecting governance	Abolishing anti-competition collusions/ cooperating with government's request for information
Customers	19. Protecting customers	Warranty for product quality/ providing safety information/ protecting personal information
Environmental Protection	20. Duty to preserve the natural environment	Ensuring environmental management systems/ communicating company-wide and with outsiders regarding the company's achievements/ evaluating and improving the environmental impact and safety of products and manufacturing/ establishing plans to prevent and manage environmental and other emergency situations/ contributing to society by encouraging partner businesses to improve their environmental efforts
Internal Management	21. Rules of management	Establishing the Practical Guideline on Human Rights/ ensuring company-wide communication
Monitoring	22. Monitoring and reporting	Establishing a human rights watch system/ ensuring company-wide communication and communicating with outsiders
Regulations	23. Regulations and evaluation rewards	Ensuring a regulative system/ providing rewards as results of evaluations

## Human Rights Management System

SK Chemicals' mission statement—"We promote better health for all humankind and protect the natural environment of the Earth"—provides the principle and basis for all decisions the company makes in pursuing its businesses. The mission statement embodies SK Chemicals' commitment to protect and respect fundamental human rights. The company believes protection of human rights forms the fundamental basis and framework of its management. It recognizes that human rights must be upheld not only by the government, but also by every member of the society. As a member and corporate citizen of our society, SK Chemicals continues to ensure happiness and health of stakeholders and uphold their human rights.

Human rights management at SK Chemicals will be based on the Human Rights Management Principles, which the National Human Rights Commission of Korea is drafting on the basis of the Self-Diagnosis Tool for Human Rights Management at Corporations. Once completed, the system will include the existing human resources provisions as well as new ones concerning labor relations, fringe benefits, and more. By clarifying the roles and responsibilities of each department, the new system will ensure that its provisions will be complied through continuous monitoring and updates.

In addition, SK Chemicals will develop and publish the Practical Guideline for Human Rights Management in order to help its employees understand human rights management and carry out its requirements through providing standards on specific behaviors and principles. In the future, the company will provide at least once training session each year for all employees to enhance their capacity for practice, and continuously upgrade the Guideline and training programs based on feedbacks.

SK Chemicals also intends to expand its principle of human rights management to its partner businesses as well. It will actively encourage its suppliers, subcontractors, and other partners to comply with the company's human rights policy. Where these businesses lack their own programs and policies for protecting human rights, SK Chemicals will provide them with its Policy and Practical Guideline on Human Rights, and may bring in their representatives for special training when necessary. In negotiating important investment or supply contracts, SK Chemicals will also review the candidate businesses in terms of their human rights practices.

As part of its basic human rights policy, SK Chemicals also provides education on preventing sexual harassments and improving the awareness and perception of people with disabilities. In 2010, all employees were required to complete two hours of classes, with 99% of employees fulfilling this requirement by the end of the year. In 2011, the programs were extended to the existing employees who had failed to complete their requirement as well as to the new employees, bringing the completion rate to 100%. In the same year, the company also provided 20 minutes of additional sexual harassment education for all SK employees.

## Ethical Management System

The major issues involved in ethical management at SK Chemicals include handling unfair transactions, and preventing and handling unfair requests, bribery, and other various types of corruption and moral hazards. In order to manage and improve these issues effectively, SK Chemicals has established an ethical management system that includes the Self-Correction Committee, a separate Web page for ethical management, educational programs and pledge on ethical management, and the distribution of SK Chemicals Compliance Guide.

### Self-Correction Committee

In an effort to satisfy the social expectations of ethical management and establish a healthy corporate culture by spreading ethical management, SK Chemicals launched the Self-Correction Committee in 2009. Placed directly under the CEO's authority, the Committee, under the chairmanship of the Officer of Corporate Culture, consists of the heads of Human Resources, Accounting, Purchase, and Legal Affairs departments as well as of the two business divisions as senior members. The Committee conducts voluntary reviews and assessments of the five areas of the company's management—human resources, accounting, purchase, financial executions, and business management—twice a year. In 2011, the Committee found no violations or illegal actions in any of these five areas.

### Counseling and Reporting

SK Chemicals provides a Web page (<http://www.skchemicals.com/korean/sc/sub3-11.asp>), which displays the information on how employees and outside stakeholders can seek counseling or report on violations of ethical management. The Web page provides an overview of ethical management principles and practices at SK Chemicals and provides access to counseling or reporting venues. It provides a confidentiality program, protecting the anonymity and privacy of reporters so that they can report without fear of reprisals. In 2011, three claims were accepted via the Web page, but were all found out to be misleading or false.

### Ethics Education

Ethical management can succeed by spreading a culture of ethical management and enabling employees to identify and prevent various risks. SK Chemicals therefore provides annual updates on employees' education and training in ethical management, requiring them to join the pledge on ethical management. The pledge ceremony starts by having the CEO and representatives of employees swear an oath to abide by the principles of ethical management. It then proceeds to require all employees of SK Chemicals to complete their education online on ethical management, and give their pledges in turn.

## Fair Trade

### Self-Compliance Program for Fair Trade

In order to remain faithful to the order of the market and promote and uphold fair, free competition among businesses, SK Chemicals adopted its own Self-Compliance Program (CP) for Fair Trade in 2006. The Board of Directors has since been appointing the manager to oversee and supervise this program. In 2009, SK Chemicals applied for a screening and evaluation of its compliance program by the Fair Trade Commission of Korea. As a result, the company garnered an "A" rank.

In order to ensure the effectiveness of the compliance program, SK Chemicals has been operating a bulletin board dedicated to the issue of fair trade on its intranet. It also added a new Web page to its official website in 2009, informing the public of SK Chemicals' continued commitment to comply with rules and principles of fair trade. In addition to providing periodical education and training, SK Chemicals requires employees to check and monitor their own involvements in upholding fair trade using a checklist, and to consult responsible officers or departments within the company before proceeding with actions bearing risks of legal and ethical violations. The company also publishes handbooks on fair trade for circulation throughout the organization as well as on the online bulletin board on the intranet so that the employees can easily access, read, and print them. The fair trade bulletin board is also used to update employees on the latest legal amendments and developments, court precedents, and outsiders' activities for fair trade. Since February 2007, the company has been publishing and circulating the monthly Legal Affairs Letters, informing employees of the latest controversies and issues in fair trade, related legal provisions, and so forth. The company has also published and circulated a pocketbook Compliance Guide that employees can carry with them and read whenever possible. Since signing the Subcontract Fair Trade Agreement in 2008, SK Chemicals rigorously examines its own compliance with the Subcontract Act and strives to ensure mutual growth with its partner businesses.

### Fair Trade Education

SK Chemicals developed a plan for the Education on Fair Trade programs in 2006, providing training for all employees both periodically and whenever necessary. The periodical courses are provided twice a year, for two hours each, informing employees vulnerable to risks in purchasing, sales, and marketing. In addition, the company provides training and education on fair trade, whenever necessary, for newly hired employees as well as officers responsible for ensuring fair trade. In April 2009, SK Chemicals co-developed with SK Tellink an online fair trade program, which it provided across the entire organization in July of the same year. The online program was significantly updated in October 2011, incorporating the latest changes in fair trade laws and regulations.

#### Programs for Fair Trade

##### Company-wide Programs

Provided to all employees (whenever needed)

##### Departmental Programs

Provided periodically to employees in certain departments requiring heightened knowledge and understanding of fair trade (twice a year)

##### Workshops

Provided to fair-trade officers of each department or team (twice a year)

##### New Employees Education

Provided to newly hired employees (whenever needed)





## Green Chemicals & Life Science

SK Chemicals protects nature by providing eco-friendly materials and alternative sources of energy. It also promotes better health for all humankind with its pharmaceutical products, vaccines, healthcare products, and solutions.

# 2. GREEN CHEMICALS

- Eco-friendly Materials
- Alternative Energy
- Ensuring Products' Compliance with Environmental Regulations

## Eco-friendly Materials

### Strategy for Developing Eco-friendly Materials

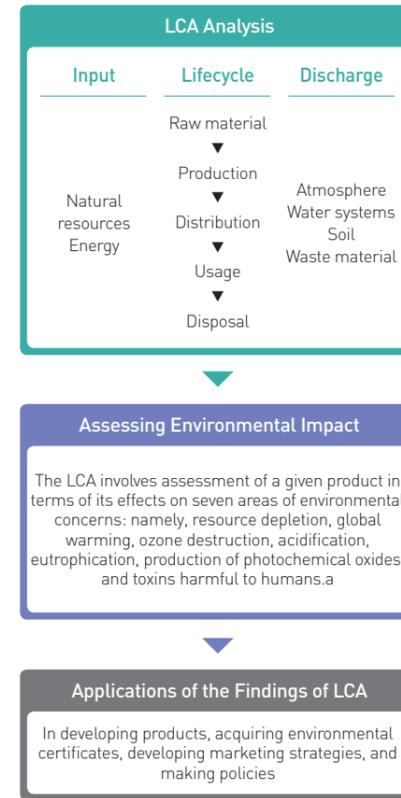
The overarching vision of the Green Chemical Division at SK Chemicals is to become "a provider of total eco-friendly materials and solutions." Achieving this goal is indispensable to the whole company achieving its mission of becoming a "global leading company." The green chemical businesses at SK Chemicals involve a rapidly diversifying portfolio that ranges from industrial materials and complex materials to highly-functional, bio, and energy-storage materials, developed on the basis of the company's accumulated expertise.

An eco-friendly material refers to the material that has been environmentally friendly in its production process. These materials include those that have been made with all-natural ingredients that minimize environmental impact and reduce dependency on fossil fuels. In developing these materials, SK Chemicals constantly strives to fulfill its mission of protecting the natural environment of the Earth. The green chemical businesses can be largely divided into four categories: the composite materials made with carbon fibers and provide alternative lighter solutions; highly-functional materials that satisfy the heat and durability requirements in miniaturization; bio materials that reduces waste materials and carbon dioxides generated through decomposition; and energy-storage materials that are indispensable to the development of new and renewable energy. By 2015, SK Chemicals targets to double the sales and operating income from these sources so that it can become a global leader in the industry by 2020.

### Future Areas of Businesses for the Green Chemical Division



### LCA Process

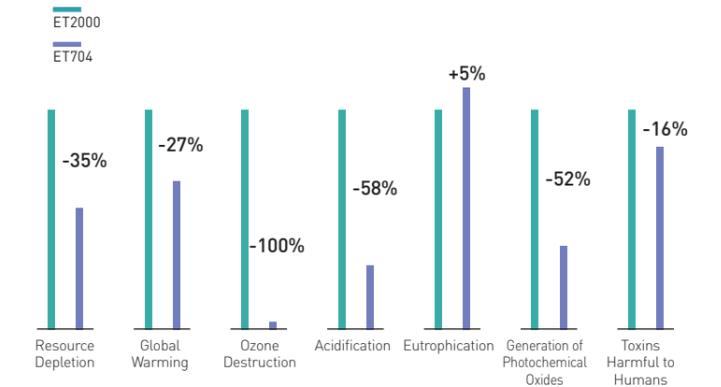


## Efforts to Improve the Environmental Effects of Products

### Lifecycle Assessment (LCA)

SK Chemicals conducts lifecycle assessments of all its major products in order to improve their environmental impact. In 2010, the company assessed the lifecycle of ET704, which was created by replacing the hazardous substance, bisphenol-A (BPA), with the environment-friendly cyclohexane dimethanol (CHDM) in ET2000, the standard material used in manufacturing resins for SKYBON toners. A comparative analysis and assessment of the two materials showed that ET704 generated relatively less environmental impact than its predecessor, ET2000, except in terms of eutrophication. ET704, in other words, reduced ET2000's overall environmental load by approximately 40%. SK Chemicals plans to strengthen the basis for manufacturing eco-friendly products by periodically reviewing the environmental impact of its products using quantitative tools. The company will extend the LCA to all its products in the future.

### Findings of the LCA of Toner Resins



※The percentages (%) indicate the proportions by which ET704 reduces the environmentally harmful effects of ET2000.

### Carbon Labeling Certificate

SK Chemicals received the carbon labeling certification, issued by the Korean Ministry of Environment, on the resins (ET2000, ET704) for its SKYBON toners in 2010. Because the resins are producer goods, their impact in the stage of "usage" and "disposal" was not taken into account when they were reviewed for the Carbon Labeling Certification according to the Ministry's policy. The Carbon Labeling Certification is a system that attaches labels to products indicating the amounts of carbon footprint from their production to their disposal. By earning these certificates on its products, SK Chemicals will continue to share vital environmental information of its products with consumers so that consumers can make wiser and conscious choices in the efforts to reduce greenhouse gas emissions.

### Result of the Carbon Grade Certification Review

Product Name	Min. Carbon Grade	Unit	Greenhouse Gas Emissions throughout the Lifecycle			
			Before Manufacturing	Manufacturing	Usage	Disposal
Saturated co-polyester resin for toner(ET2000)	2834.528	gCO <sub>2</sub> /kg	2169.551	664.977	-	-
Saturated co-polyester resin(Non-BPA) for toner(ET704)	2355.661	gCO <sub>2</sub> /kg	1710.946	644.714	-	-

### Carbon Grades of ET2000 and ET704



## Eco-friendly Materials

### Eco-friendly Bioplastic: Polylactides (Polylactic Acid, PLA)

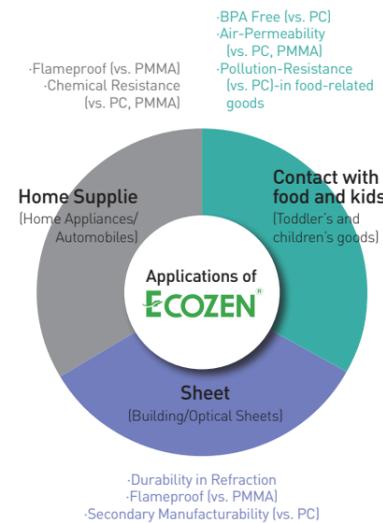
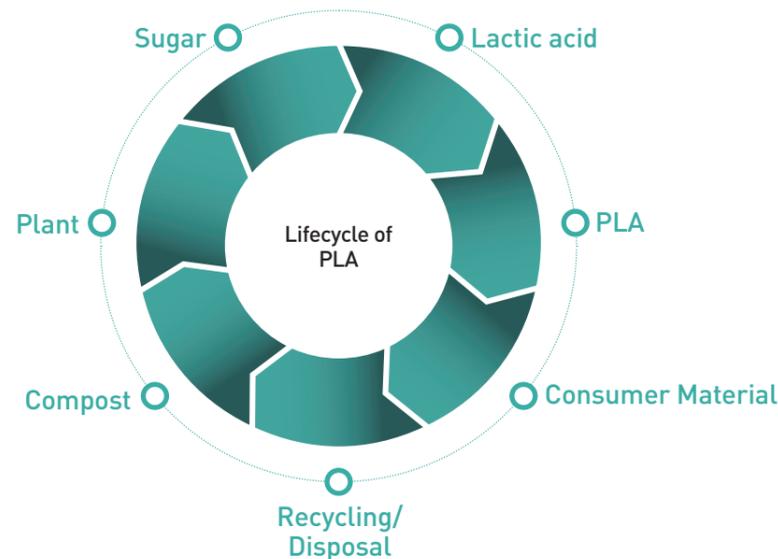
Climate change and the continuing depletion of crude oil, resulting from our excessive reliance on fossil fuels, are serious environmental problems facing the entire global community, and raise urgent questions concerning the sustainability of plastics, which are made of petrochemicals drawn from crude oil. With an aim to provide an innovative alternative to the current situation, SK Chemicals is pursuing the development and production of bioplastics, made of ingredients derived from all-natural, botanical sources (biomass), as the next-phase impetus for its growth.

PLA is a highly appealing bioplastic, which can help significantly reduce greenhouse gas emissions, decrease the amounts of waste material generated, and facilitate resource recycling. Compared to other bioplastics developed so far, PLA offers mechanical properties and plasticity that easily allows molding. As a major alternative to plastics made with petrochemicals, PLA enjoys increasing popularity, especially in manufacturing packing materials. Due to the limits inherent to PLA in terms of manufacturability and durability, however, it has so far mostly been applied to producing disposable packing materials and bio-decomposable bags—consumer products that do not require durable lifecycles.

In order to perfect PLA by overcoming these shortcomings, SK Chemicals has been developing a technology that would dramatically improve the durability of the material and thereby render it more amenable to manufacturing. In 2011, the company launched a new PLA, which it named "EcoPlaNTM," based on its original technology. EcoPlaNTM is a PLA with a much wider range applications over and beyond producing disposable packing materials, including the productions of functional films, high-end packing sheets, home appliances, home décor objects, bathroom amenities and school supplies.

#### Q&A on EcoPlaNTM

- Q. What distinguishes PLA from other polymers?**
- A.** PLAs are fundamentally different from other polymers that are made with ingredients extracted from petrochemicals. PLAs, made with sugar from such organic sources as corns and sugar canes and fermented by bacterial activities, return to nature (in the form of compost) in the disposal phase of their lifecycle, thereby providing nutrition for plant life. In other words, PLAs are an eco-friendly alternative to conventional plastics that accommodates resource recycling.
- Q. What distinguishes EcoPlaNTM from other PLAs?**
- A.** First, EcoPlaNTM is made of botanical ingredients without any genetic modifications done to them. Since the sugar that is used to make EcoPlaNTM is derived from non-genetically modified plant sources, its manufacturing bears no significant impact on the reliable supplies of foodstuff around the world. EcoPlaNTM is indeed an epitome of the advanced polymer technology of SK Chemicals, which is capable of ensuring required levels of malleability and durability even while using only 100% natural, bio-materials in making EcoPlaNTM.

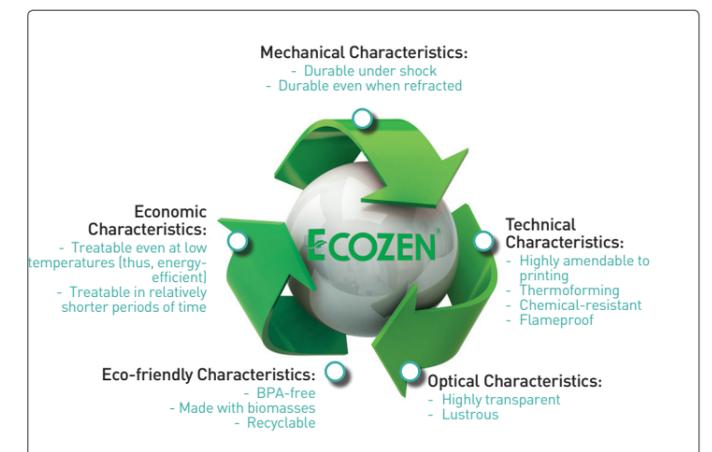


### Eco-friendly Bio-Based Plastic: ECOZEN®

While SK Chemicals is vigorously researching and developing new bioplastics made with ingredients from botanical sources (biomasses) in an effort to help the world overcome the serious challenges of climate change and resource depletion, commercialization of these materials remains slow due to their inherent shortcomings (e.g. tendency to lose their properties under manufacturing conditions, proneness to decompose while in distribution, the difficulty of recycling, and ensuring price competitiveness). As an alternative solution, SK Chemicals has chosen the production of ECOZEN®, a bio-based plastic, as another source of its future growth in addition to developing bioplastics.

ECOZEN®, whose name is a synthesis of "eco-friendliness" and "zenith," represents the height of SK Chemicals' eco-friendly technology. A bi-copolyester made in part with organic, recyclable biomass ingredients, ECOZEN® was developed in 2009 and was hailed as one of the Ten Newest Technologies of Korea and was rewarded with a silver award at the Korea Technology Grand Prix.

#### • Main Characteristics of ECOZEN®



Made partially with carbon-neutral biomass ingredients, ECOZEN® can inhibit the anthropogenic emissions of carbon dioxides, thereby reducing the greenhouse effect. Free of bisphenol-A (BPA), a hazardous chemical that may interrupt with the natural immune and endocrinal system of the human body, ECOZEN® is also a healthier alternative. This material is highly recyclable therefore will help combat resources depletion.

Compared to conventional plastics made of petrochemicals, ECOZEN® boasts of much stronger mechanical and manufacturable characteristics. In other words, it is a very attractive material with far and wide applications that overcome the shortcomings of decomposable bioplastics. Strongly chemical-resistant, lustrous, and flameproof, ECOZEN® can be used to manufacture home appliances, building materials, food packages, and more. It is also a popular material for manufacturing kids' goods because it is BPA-free, a chemical which is coming under increasing scrutiny and regulation worldwide.

## Alternative Energy

### Eco Prime

#### What Is Biodiesel?

Biodiesel is a common name referring to methyl ester, which is obtained by reacting natural fatty oils found in either animal or botanical sources with methanol. It is an eco-friendly, alternative fuel that can be used without modifying the structure of the conventional diesel engine. Many countries in Europe, North America, and Southeast Asia began to use biodiesel around 2000. Since the BD20 Trial Project began in Korea in 2002, gas stations across the country have been selling diesel mixed with 2% biodiesel (BD5). BD20 refers to the mixture of ordinary diesel with 20% biodiesel (80:20), while BD5 refers to the mixtures of ordinary diesel with 5% or less biodiesel.



#### How Biodiesel Improves the Environment

Biodiesel decomposes by more than 77% in the natural ecology system within 28 days after its disposal. Used as fuel for water transportation along rivers and oceans, it helps to reduce levels of water pollution. Plants reabsorb the carbon dioxides emitted by its combustion therefore, using one ton of biodiesel leads to the decrease in the amount of carbon dioxide emissions by more than 2.2 tons [source: The Journal of Chemistry, published on June 21, 2010]. When the carbon emission trade is enforced, using biodiesel will become attractive not only for its environmental benefits, but for its economic potential in carbon credits as well.

#### Comparing Biodiesel and Diesel

Indicator	Item	Description	BD5	BD20	BD100
Automobile performance	Performance at low temperature	Whether the automobile starts up at a low temperature	Similar to diesel	A bit worse	Much worse
	Lubrication	Whether internal parts have been damaged or have stayed durable	A bit better	Much better	Much better
	Amount of fuel required	Determining how much of each fuel is needed, everything else being equal	Similar to diesel	A bit worse	Much worse
	Output	Gauging change in drivability (especially in acceleration)	Similar to diesel	A bit worse	Much worse
	Metal elution	Whether internal parts have been damaged or have stayed durable	Similar to diesel	A bit worse	Much worse
	Absorption	Whether internal parts remain durable	Similar to diesel	A bit worse	Much worse
Greenhouse Gas Emissions	NOx	Urban smog and harm to the human body	Similar to diesel	A bit better	Much better
	Smoke	Measuring the changing amounts of smoke emitted	Similar to diesel	A bit better	Much better
	CO <sub>2</sub>	Measuring the levels of CO <sub>2</sub> emitted	Similar to diesel	A bit better	Much better
	CO	Measuring combustibility and harm to the human body	Similar to diesel	A bit better	Much better
Boilers	Amount of heat generated	By reference to the changing amounts of each fuel required	Similar to diesel	A bit worse	Much worse
Product Appeal	Stability in oxidation	Observing proneness to change in color and increases in the amounts of pollutants	Similar to diesel	A bit worse	Much worse
	Appearance, smell	Indirectly confirming the functioning and normal nature of products	Similar to diesel	A bit better	Much better

■ Much better  
■ A bit better  
■ Similar to diesel  
■ A bit worse  
■ Much worse

Source : Engine Test Report by SKE Technology Institute and other publications (i.e., PERP Report and NREL/DOE publications).

While the botanical source of biodiesel makes it a much eco-friendlier alternative to diesel, it may compromise the performance of automobiles, except in terms of lubrication.

Biodiesel, up to BD5, satisfies all measures of quality except performance at low temperature.



### SK Chemicals' Biodiesel: Eco Prime

SK Chemicals has been providing biodiesel under its own brand name, Eco Prime, for major distributors of oil in Korea since January 2008, which has dominant market share in Korea. SK Chemicals has been able to achieve this success by developing an innovative technology for utilizing the palm fatty-acid distillates (PFAD), a byproduct generated in palm oil production, and by using the existing, idle manufacturing facilities to ensure price competitiveness. The company has also launched ST Green Energy, a subsidiary specializing in the trade of crude oil based in Singapore, to ensure reliable and efficient supplies of raw material necessary for producing biodiesel.

## Ensuring Products' Compliance with Environmental Regulations

### Compliance with the REACH

The Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH) Program is a system that the European Union uses to control the influx of new chemical substances by requiring the registration, evaluation, and authorization of various chemicals depending on their types and amounts used. CHDM developed by SK Chemicals is also subject to the REACH, and the company accordingly registered the material as of Oct. 22, 2010. SK Chemicals also manages and controls various chemical compounds involved in the manufacturing activities of its numerous plants using the SHEQ system.

#### REACH Deadlines

Amount of Product Produced/Imported in EU	Deadline for Official Registration	No. of Subject Products
Substance of 1,000t or greater in weight	By Nov. 30, 2010	1
Substance of 100 - 1,000t in weight	By May 31, 2013	1
Substance of less than 100t in weight	By May 31, 2018	7

### Compliance with the GHS

The Globally Harmonized System (GHS) for Classification and Labeling of Chemicals classifies various chemicals produced all around the world depending on their levels of hazard or risk, and give worldwide-recognized, uniform warning labels and MSDS to dangerous ones. Each member state has established its own GHS regulations in order to assist its companies and citizens to comply with the GHS. SK Chemicals thus adheres to the Korean and EU GHS regulations (i.e., the Classification, Labeling, and Packaging of Substances and Mixtures).

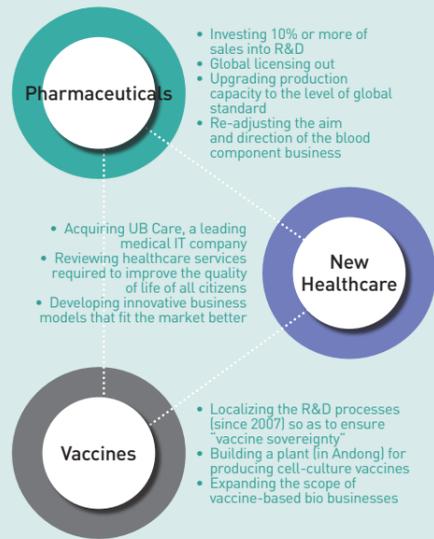
#### GHS Deadlines

GHS Type	Subject Chemicals	Effective as of	No. of Subject Goods
Korean GHS	Single substances	July 1, 2010	143
	Mixtures made of 2 or more single substances	July 1, 2014	N/A
EU GHS	Single substances	Dec. 1, 2010	4
	Mixtures made of 2 or more single substances	June 1, 2015	N/A

# 3. LIFE SCIENCES

- Vision and Strategy of the Life Science Division
- Research and Development at the Life Science Division
- Clinical Ethics
- Environmental Responsibilities of Pharmaceutical Producers
- Customer Satisfaction

## • Three Areas and Strategies of Business



## Vision and Strategy of the Life Science Division

The Life Science Division at SK Chemicals has a vision: to become "a provider of total healthcare solutions worldwide." Fulfilling that vision is crucial for SK Chemicals to become a "global leading company" in the area of total healthcare solutions. Boasting of a wide-ranging product portfolio and a value-oriented, advanced marketing campaign, the Life Science Division divides its focus into three areas of pharmaceuticals, vaccines, and new healthcare solutions. It has recently decided to increase investment in vaccines and pioneer overseas markets for its pharmaceuticals and medical solutions, so as to become a renowned provider of total healthcare solutions all around the world based on its success and achievements in Korea.

## • Product Lineup

### For the Digestive System



Levopride

- Available in tablets
- Improves the gastric & intestinal movements



Omed

- Available in tablets
- Treats ulcers of the stomach and the duodenum

### For the Musculoskeletal System



Trast

- Piroxicam patches
- For arthritis, peritonitis, and muscle pain
- Effect lasts for up to 48 hours



Joins

- Available in tablets
- For arthritis and rheumatoid arthritis
- First-ever pharmaceutical in Korea to have been made with natural ingredients

### For the Circulatory System



Ginexin-F

- Ginkgo biloba extract
- Improves blood circulation



Cosca

- Losartan tablets
- Treats hypertension

### Others



Futhan

- Futhan for injection
- Anti-coagulation agent



Mvix S

- Mirodenafil ODF
- Treats erectile dysfunction
- Developed and produced in Korea

### Vaccines



Influenza vaccine



Rotatec (against rotavirus infection)



Gadasil (against HPV)



Prodiar 23 (against pneumococcus)



Td Vaccine



FirstHib (against Hib)

### Blood Products



SK Albumin  
Made of high-purified human serums  
(5, 20, 25%)



Liv-Gamma  
Globulin for the human immune system  
(I.M., I.V., Liquid, Powder)

### Medical Devices



Oxygen Generator



CPAP Sleep Test Device



Artificial Respirator at Home

## Research and Development at the Life Science Division

### Pharmaceuticals

#### Synthetic Drugs

In 1999, SK Chemicals developed and registered SUNPLA, the world's first third-generation platinum-complex anti-cancer agent, thus opening a new chapter in the history of pharmaceutical industry in Korea. In 2007, the company also succeeded in developing Mvix, a treatment for erectile dysfunction, thereby consolidating its leading position in the Korean drugs market. SK Chemicals also conducts active research and development, with the involvement of high-caliber researchers, of treatments and new solutions for fibrosis, prostate hypertrophy, diabetes, and other various diseases, with the goal of promoting better health and better quality of life for all humankind.

#### Natural Drugs

Natural drugs refer to the products of active ingredients obtained from medicinal herbs. Joins, Korea's first natural pharmaceutical, opened a new horizon for natural drug development in Korea by becoming a fundamental arthritis treatment that overcomes the shortcomings of synthetic treatments through its mechanism of preventing cartilage destruction. In addition, Ginexin, Korea's no. 1 treatment for blood circulation, has become a representative symbol of the company. Now, Ginexin's exports are being made as far as to the Middle East with its brand name intact. In 2010, the company did a major improvement on Ginexin and transformed it into Renexin, a new complex pharmaceutical with enhanced properties for expanding blood vessels.

SK Chemicals is currently engaged in the clinical trials of new natural drugs for such diseases as senile dementia and asthma. Its goal is to develop groundbreaking, natural, side-effect-free drugs for chronic and incurable diseases that existing synthetic drugs have failed to cure.

#### Drug Delivery Systems (DDS)

Drug delivery systems form an indispensable medical technology that minimizes the side effects of various drugs while maximizing their intended effects. Trast, widely beloved in Korea for relieving arthritic and other muscle pains in and around the knees, is the world's first patch-type arthritis treatment made with SK Chemicals' advanced DDS technology. Attached to the patient's knee, Trast remains effective for 48 hours, thanks to its penetration enhancer and releasing rate control mechanism that dispenses the medically active ingredients at a consistent rate. Omed, an innovative and safe treatment for gastric ulcers, has been acclaimed for its accurate operations and became the first finished pharmaceutical product made in Korea to be exported to the EU beginning in 1999. The drug can now be found in wide circulation throughout Europe.

In 2008, SK Chemicals also succeeded in exporting its technology for improving the functions of anti-cancer agents based on its expertise in pharmaceutical production. The company applied to the EU authorities for export authorization in 2011 on its patch-type treatment for senile dementia and gastric ulcer drug. With the authorization complete, these two treatments will be exported as early as 2013. In 2011, the company also successfully launched Mvix S, the world's first ODF-type erectile dysfunction treatment with maximized convenience for patients. With these achievements behind, SK Chemicals continues to pursue rigorous research and development of new high-value-added pharmaceutical products and solutions targeting the international market.

### Vaccines

SK Chemicals is developing, producing, and distributing a wide range of vaccine products in the firm belief that vaccines and other bio-medical products will provide a major impetus for economic growth in the future when supported with sufficient research and market infrastructure. The company continues to invest in the research, development, production, and sales of basic biological components crucial to public health. As a result, all its major products will enter and complete clinical tests in 2012. SK Chemicals is also the first company in Korea to build a state-of-the-art, cell-culture vaccine plant, which is a major addition to the expanding medical industry and infrastructure in Korea. This helped the nation to uphold its sovereignty on the production and development of crucial vaccines.

In 2000, SK Chemicals co-launched IN2GEN, a biotechnology venture, with the Seoul National University Cancer Research Center to facilitate research on genetics, protein engineering, and other fields of biotechnology. The company has also recently signed an agreement with a leading multinational pharmaceutical corporation for supplying an original cure it has developed for an incurable disease, involving genetic restructuring.

### New Healthcare

Nano-technology, biotechnology, and information technology are the three key technologies that will usher in our future, featuring increased convergence among the different technologies. As part of its efforts to prepare for and lead the future, SK Chemicals acquired UB Care, a leading company in the Korean medical IT industry, in 2008 in a move that prepares the groundwork for ubiquitous healthcare. The company is also actively developing new and innovative business models that can dramatically improve the quality of life for all humankind.

• NT : Nanotechnology / BT : Biotechnology / IT : Information technology

## Clinical Ethics

### Progress in Clinical Tests

Clinical trials often form the most important phase in the drug development, for they are crucial to verifying its safety and effectiveness. The Life Science Division at SK Chemicals works closely with authoritative institutes of clinical testing in Korea, such as the research centers at the Seoul National University Hospital, Seoul Asan Hospital, and Samsung Medical Center in Seoul, in order to ensure thoroughgoing and reliable clinical tests of its new pharmaceutical candidates.

From 2009 through February 2012, SK Chemicals saw a total of eight clinical tests held for its products, with the registration of 626 subjects. With four of these tests already completed, SK Chemicals continues to uphold its reputation as the most clinical test-driven pharmaceutical producer in Korea. Since the Korean government adopted the Investigational New Drug Request System (IND), SK Chemicals applied for 46 IND clinical tests in total, the detailed information of which is open to the public through the Korean Food and Drugs Administration (KFDA)'s website at <http://ezdrug.kfda.go.kr>.

Inspired by its successes in the development of Korea's first-ever pharmaceutical anti-cancer agent (SUNPLA), and in launching Mvix (erectile dysfunction treatment) and first-ever natural drug (Joins), SK Chemicals' Life Science Division has been conducting clinical tests and research of its natural treatments for senile dementia, asthma, and gastritis since 2006. The company hopes that these natural drugs would fare much better in terms of safety than their synthetic counterparts. Mvix, for its part, saw its clinical test completed in collaboration with the Clinical Testing Center at the Severance Hospital at Shinchon, and was successfully launched on the Korean market in December 2011 as Korea's first ODF-type treatment for erectile dysfunction.

SK Chemicals, which has been importing and distributing various vaccines through its partnerships with multiple multinational pharmaceutical corporations around the world, decided to expedite localization of the production of premium vaccines and thereby contributed to the growth of the national vaccine industry by commencing the construction of Korea's largest vaccine production facility in Andong in June 2011. Imbued with a mission to turn SK Chemicals into a global leading company, the Life Science Division has submitted a wide range of new pharmaceutical candidates to active clinical tests and research across North America and Europe as well.

### Ethical Clinical Tests

In carrying out all its clinical test projects, the Life Science Division at SK Chemicals complies with the "Good Clinical Practices" (GCP) of the International Conference on Harmonization (ICH), and actively incorporates the recommendations from the KFDA to ensure safety of all test subjects. The clinical research staffs at SK Chemicals, comprised of the highest-caliber researchers in Korea, work hard to ensure the safety of clinical tests and high reliability of all new product candidates based on their thoroughgoing training and extensive experience in clinical research.

The company has also recently amended its own Standard Operation Procedures (SOP), reflecting the latest guidelines from the ICH. The new SOPs will significantly improve the quality of clinical test results and guarantee the safety of test subjects.

SK Chemicals is also working hard to solve the ethical dilemmas involved in animal testing, which is necessary but also quite controversial. In order to ensure ethical and scientific tests of animals under the current legal regime in Korea, the KFDA and the Quarantine Service mandate the installations of the Institutional Animal Care and Use Committees (IACUC) in companies involved in animal testing. Accordingly, the Life Science Research Center at SK Chemicals installed its IACUC on Feb. 1, 2009. It is comprised of five expert members as of now. These members include: Jeong Gi-won, who is the Chair of the committee; Kim Taek-su, a deputy-manager and an assistant administrator; Lee Hae-in, a section chief and an expert committee member; Prof. Choi Yeon-shik of Korea Polytechnic Colleges; and Prof. Kim Bae-hwan of Keimyung University. The committee holds regular meetings and researcher training twice a year. It also receives and reviews Animal Testing Applications from researchers, ensuring that such testing is conducted in the most ethical, scientific manner possible. The committee also files annual online reports to the KFDA and the Quarantine Service on the details of animal testing conducted at SK Chemicals.

## Environmental Responsibilities of Pharmaceutical Producers

### Minimizing Environmental Impact While Developing Pharmaceuticals

Due to the multiplicity and complexity of various tests involved in the development and launching of SK Chemicals' pharmaceutical products, large quantities of byproducts and waste materials are generated. SK Chemicals acknowledges the important responsibility it has in minimizing its byproducts and waste materials and handling them in the safest possible manner when it plans for its R&D activities.

The R&D Center of the Life Science Division at SK Chemicals begins to perform these environmental responsibilities in the first phase of planning for lab research. In order to minimize environmental impact during the development process, it is absolutely crucial for researchers to establish and verify optimal research plans at each stage and succeed in research as soon as possible based on their designs of experiments (DOE), using only minimal quantities of chemical substances and minimizing byproducts and waste materials.

SK Chemicals complies with the laws and regulations on reusing or recycling these byproducts and waste materials, distilling and discharging them through its own sewage treatment facilities, or disposing them in legally specified procedures. Recyclable organic solvents, for instance, are collected separately for later reuse and recycling. The collection, handling, and disposal of toxic chemicals are meticulously monitored in terms of their compliance with the laws and regulations.



### Managing Environmental Risks of Unused Pharmaceuticals

The inevitably produced unused pharmaceuticals, if not treated properly, may cause significant damages not only to the human body but also to the ecological system. The Life Science Division at SK Chemicals commissions the treatment and disposal of these unused drugs to a government-authorized and certified waste disposal specialist in order to render the negative impact on the environment close to nil. The company collects and accumulates drugs that need to be discarded in a designated location, which the specialist will then collect using its specialty vehicle. The representatives of both companies confirm the amounts of those drugs being disposed of. Both companies follow the government regulations on the control of atmospheric pollutants emitted from incineration. The ashes from incineration are collected in a designated spot and buried under the ground when they reach a certain amount. In 2011, SK Chemicals disposed of 30.8 tons of unused pharmaceuticals safely with Eco Management Korea.

## Customer Satisfaction

SK Chemicals' vision to become a global leading provider of total healthcare solutions continues to guide and shape its policy for customer satisfaction. At the Life Science Division, customer satisfaction starts first and foremost by carefully analyzing customers around the world and proactively offering treatments, vaccines, and new healthcare services that are crucial to promote better health of all humankind.

### Solving Customer Complaints

The Customer Service Center at the Life Science Division follows a thoroughly systemized complaint resolving process, based on the company's accumulated experience with customer relations, with the goal of customer satisfaction and efficient problem resolution.

SK Chemicals operates a customer call center for complaints and inquiries from customers, and also provides a similar venue through its website. Once our service agents receive complaints, the Customer Service Center searches and provides the appropriate measures in response. The complaint-handling procedure at SK Chemicals divides complaints into different categories for fast and effective resolution of them, including: product and packaging defects; reports of abnormal reactions; and other complaints (e.g. about prices and policies, exchange of expired products, etc.). Complaints received and sorted at the Customer Service Center are then communicated to related departments to be addressed.

#### ● Number of Customer Complaints Handled

	2009	2010	2011
No. of customer complaints handled	441	604	405
% of customer complaints handled	100	100	100





## Environmental Achievements

SK Chemicals sees environmental management as a way to improve the company's value. This is by ensuring the preservation of the natural environment in all its cultural practices, processes, and production activities. The aims of achieving a green culture, green processes, and green products continue to shape and guide SK Chemicals' environmental policy.

# 4. Environmental Achievements in Managing Plants

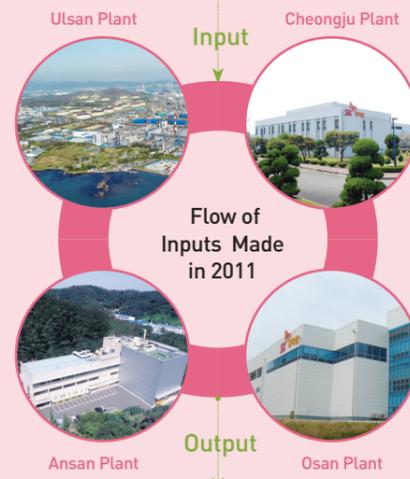
- Climate Change and Energy Efficiency
- Controlling Raw and Other Materials
- Controlling Waste Material
- Controlling Hazardous Chemical Substances
- Controlling Water Consumption and Wastewater
- Preventing Soil Pollution
- Preventing Noises and Odors
- Preventing Ozone Depletion
- Preventing Air Pollution

**Energy Consumption**  
 Fossil Fuels: 4,603TJ  
 Biomasses: 1,929TJ  
 Electricity and Heating: 1,393TJ

**Raw and Other Materials**  
 435,697t

**Water Consumption**  
 7,082,000t

**Hazardous Chemicals**  
 27,279t



**Energy Sold**  
 Steam: 4,699TJ

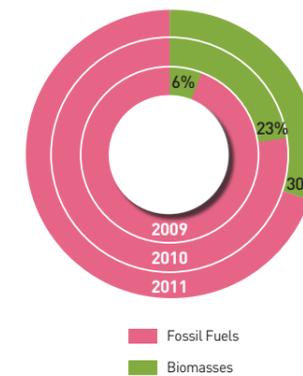
**Greenhouse Gas Emissions**  
 496,481t (CO<sub>2</sub>-eq.)

**Waste Material**  
 53,648t

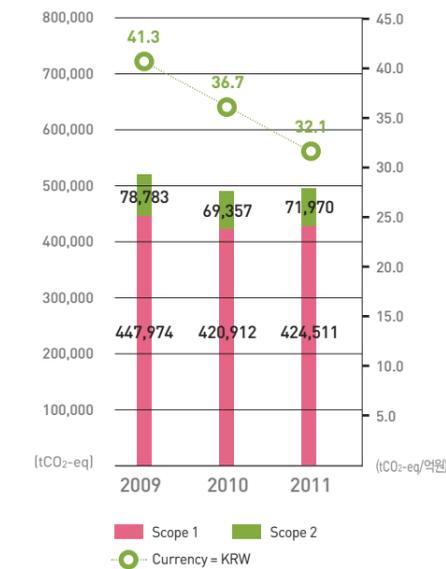
**Wastewater**  
 673,000t

Systematic, effective control of various environmental factors, on the basis of a proper environmental management system, is of paramount importance especially for the chemical industry as the industry involves extensive risks of environmental damages throughout all the processes and activities, from raw material trade to production, distribution, and consumption and disposal. First and foremost, it is absolutely crucial to identify and control systematically the numerous environmental risks at each stages of production through an effective environmental management system. SK Chemicals requires each plant or office to enforce its own environmental policy that meets the company's standards. Prior to 2009, these activities of environmental management were mostly focused on saving (e.g. energy and resources) and improving efficiencies (e.g. energy, productivity). Now, SK Chemicals engages in more diverse activities with the goal of realizing green plants that minimize environmental pollution and energy consumption through a low-carbon, resource-recycling industrial structure. At the moment, the most pressing goals for SK Chemicals include reducing its reliance on fossil fuels and minimizing greenhouse gas emissions by increasing its use of alternative energy.

• Dependency on New and Renewable Energy



• Amounts of Greenhouse Gas Emissions



The amounts of greenhouse gas emissions represented by the graph have been calculated according to The Guideline for Greenhouse Gas Management and Others.

## Climate Change and Energy Efficiency

The direct and indirect emissions of greenhouse gases by SK Chemicals plants and offices are the results of energy consumption. Therefore, the efforts to reduce energy consumption in production and other administration-related activities and converting from the reliance on non-recyclable fossil fuels to renewable fuels bear direct relations to the tangible achievements in the reduction of greenhouse gas emissions. In order to establish and maintain a sustainable energy consumption structure, SK Chemicals enforces a variety of energy-saving activities and promotes the use of renewable energy. The company has also developed the Greenhouse Gas Inventory System in order to counter the effects of climate change, to analyze the diverse effects that greenhouse gases exert on business activities, and to control greenhouse gas emissions more effectively.

## Energy Management

SK Chemicals promotes diverse programs throughout all its plants and offices to ensure efficient use of energy and decrease in energy consumption. As a result, the company succeeded in reducing the sales- energy consumption by 8.4% from 2010 to 2011. Specifically, the company consumed a total of 7,925TJ of energy in 2011, 4,699TJ of which has been sold in the form of steam. While the amount of energy consumption increased from 2010 to 2011 by 457TJ, this is due to higher EGB operation rate as a result of increase in energy generation by the company.

• Energy Consumption

Item	2009			2010			2011			Fuel Type
	2009	2010	2011	2009	2010	2011	2009	2010	2011	
Amount of Energy Consumed (A)	Coals	3,526	3,888	4,017	Fossil Fuels					
	B-C	1,381	749	413						
	LNG	65	85	149						
	Diesel	4	11	20						
	Gasoline	1	3	3						
	LPG	1	1	1						
Amount of Energy Sold (B)	Discarded Lumber	207	917	1,310	Biomasses					
	Biogas	12	242	403						
	Biodiesel	127	113	162						
	ECO300(refined oil)	0	126	54						
	Electricity	1,555	1,327	1,375						
Total Amount of Energy Consumed (A-B)	Heat	0	6	18	Intermediate Energy					
	Subtotal	6,879	7,468	7,925						
	Steam	3,761	4,685	4,699						

The amount of energy consumed for each type of fuel has been calculated following The Guideline for Greenhouse Energy Management and Others.

## Greenhouse Gas Inventory System

In order to manage and control the greenhouse gases generated by the plants, SK Chemicals has also developed and launched its Greenhouse Gas Inventory System based on the latest information technology. The system not only enables the company to ensure efficient energy management, but also provides a systematic basis for complying with the Framework Act on Low-Carbon, Green Economic Growth enforced by the Korean government. The Ulsan plant was the first to complete this inventory system in 2009. An integrated system was completed in October 2011 for all SK Chemicals life science product plants in Cheongju, Ansan and Osan. The verification of the inventory system will be completed in 2012. SK Chemicals plans to manage and reduce the greenhouse gas emissions from its activities through this system.

## Securing Carbon Emission Right

The Ulsan plant of SK Chemicals joined the Korea Certified Emission Reduction (K-CER) Project in 2006 by successfully replacing the bunker-C oil used for its boiler systems with surplus biogases generated from the sewage treatment facility in Yongyeon, Ulsan. Ever since, the plant has obtained certifications for reducing greenhouse gas emissions by 5,319t in 2007, 3,792t in 2008, 4,556t in 2009, 4,245t in 2010, and 2,100t in 2011. In 2011, the Ulsan plant added to the K-CER project discarded lumber as yet another eco-friendly fuel it has adopted in place of fossil fuels. As of 2012, the plant is being reviewed for another certification, verifying that it has reduced greenhouse gas emissions by 34,614t this year. Thanks to these and other efforts, SK Chemicals has reduced 49,159t of greenhouse gases, according to the K-CER standard.

## Efforts in Reducing Energy Consumption and Greenhouse Gas Emissions

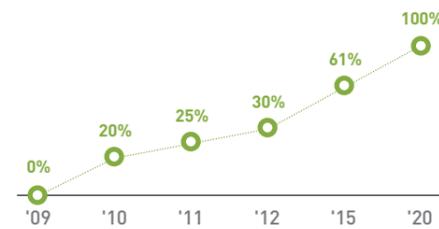
### Carbon Neutrality Road Map

Since 2009, SK Chemicals has been implementing a strategy to reduce the greenhouse gases emissions by replacing the fossil fuels used for its boiler systems with non-fossil fuels. In 2010, as a result of the effort, the company achieved a carbon neutrality rate of 20% by installing Eco-Green boiler systems running on discarded lumber only, using biogases from the sewage treatment facility in Yongyeon, and using the byproduct of the company's own biodiesel (a biomass) that has been named "ECO-300." In 2011, SK Chemicals brought that rate up to 25% by installing more Eco-Green boiler systems (#1). Now, its goal is to reach a carbon neutrality rate of 30% by the end of 2012.

By 2015, SK Chemicals will achieve a carbon neutrality rate of 61% by installing even more Eco-Green boiler systems (#2), mixing biomass-based fuels into the existing coal boiler systems, and turning more biogases into fuels to offset the increasing amounts of greenhouse gas emissions that will follow the expansion of the company's productivity and output. The company will extend these efforts to five other complexes, and continue to increase the amounts of steam it generates for sale, supplying greater amounts of eco-friendly steam energy for clients.

By 2020, the Ulsan plant will achieve a carbon neutrality rate of 100%, completely eradicating fossil fuels from its site and making itself a carbon-neutral factory.

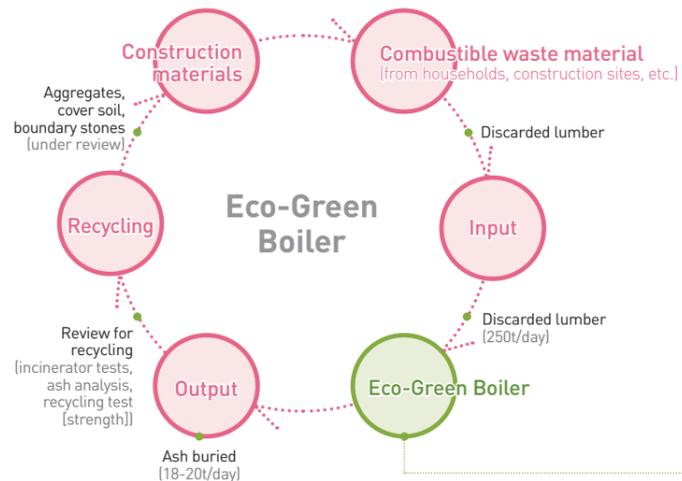
● Carbon Neutrality Road Map



### 5 Members of the Road Map Complex

SK Chemicals, Huvis, SK Petrochemicals, SK Cytec, EFKL.

### ● Eco-Green Boiler Systems FLOW



### Carbon Neutrality

The aim of carbon neutrality rate is to make the net amounts of carbon generated by various economic activities of a given organization zero (0) by leading the organization to adopt carbon-free sources of energy. Accordingly, SK Chemicals is using alternative and renewable sources of energy in order to offset the amounts of carbon generated by its plant in Ulsan.

- Heat collected from renewable energy  
40t of steam/hour
- Greenhouse gas emissions reduced  
By replacing fossil fuels: 55,000t/year
- Air pollutants reduced  
Less than 0.1ng of dioxin [by installing filters required for waste material processing facilities]

## Improving the Steam Line

SK Chemicals also succeeded in reducing the amount of energy used and greenhouse gas emissions by replacing part of a manufacturing process (distillation involving the Azeo column) using 6.0kg/cm<sup>2</sup> of steam with 3.0kg/cm<sup>2</sup> of steam. The decrease in the amount of steam energy has increased the capacity of the power generator, increasing the amount of energy it generates by one-third of the previous amount. Improving the steam line has helped the company improve the efficiency of its manufacturing process by preventing leakage of steam and by recycling the waste heat generated by chemical reactions though installing pipes exclusively for collecting waste heat.

## Mixing in Biogases from Wastewater Treatment Facilities

SK Chemicals also incorporates gases generated by the wastewater treatment facility at the Ulsan plant into fuelling its boiler systems, thereby reducing 3,200 tons of carbon-dioxide emissions per year. This technology not only helps to dispose of the greenhouse gases (mostly methane) generated in wastewater treatment, but also helps us to reduce our reliance on fossil fuels (bunker-C oil), reducing both the cost and greenhouse gas emissions.

## Recycling Biogases from the Local Sewage Treatment Facility

SK Chemicals recycles methane generated by the local sewage treatment facility in Ulsan as a fuel for the Ulsan plant's boiler systems thereby simultaneously preserving the environment and energy.

## Improving Air Booster Compressors

The Ulsan plant successfully reduced energy, materials, and labor costs by renovating the air booster compressors it operated for 16 years since 1989. The air booster compressors ensure reliable supply of air to the secondary oxidation reactor used to produce purified terephthalic acid (PTA), and was equipped with dehumidifiers and improved water distillation processes. This change has helped the plant to save KRW 210 million annually, while also generating non-financial benefits by helping to stabilize the manufacturing procedure and reducing workload.

## Leaving Bunker-C Oil Behind

During the 1990s, the Ulsan plant operated one boiler on coal and another boiler on bunker-C oil. Seeking to improve the energy efficiency of its manufacturing activities, SK Chemicals ordered the plant to halt operations of bunker-C oil boiler in 2003. The plant nonetheless maintained its output level, while reducing the amount of heat used by 27%, which translates into KRW 4 billion (as of the energy cost in 2003) in terms of the annual production cost. It is remarkable testament to SK Chemicals that the Ulsan plant continues to operate seamlessly without a single accident while using just one boiler system.

## Improving Water Treatment Processes

The Osan plant has recently installed a reverse osmosis system and a UV system in order to improve the efficiency of its water treatment facility. It also renovated the mixed-bed demineralizer (used to deionize) and the active carbon filter tower. By newly developing an integrated water control system, the plant successfully monitors the graphics and water treatment systems remotely. All these changes are expected to reduce costs by KRW 40 million annually, while also ensuring consistent water quality in the manufacturing process and better preparing against various audits and inspections.

## Replacing Outdated Facilities and Equipment

SK Chemicals takes it as its principle to prevent and minimize the leakage of any environmental risks from any site of its operations, seeking to preserve nature and save production costs simultaneously. The Ulsan plant invests KRW 4 to 5 billion annually to replace obsolete, outdated facilities. Replacing manufacturing facilities at a regular interval also enhances energy efficiency and worker safety. The plant also saves about KRW 25 million in cost each year by installing water-saving devices on showerheads, washbasins, toilets, and water taps.

SK Chemicals relocated its headquarters to ECO LAB in Pangyo, Korea in November 2010. It is the first-ever office building in Korea to receive Energy Efficiency Grade 1 certification from Korea Energy Management Corporation. It also garnered the highest score and the highest-level certification (GBCC) from the Green Building Association. ECO LAB's innovative, eco-friendly architecture was recognized again when it became the first practical building in Korea to receive the Platinum grade on the Leadership in Energy and Environmental Design (LEED) evaluation conducted by the U.S. Green Building Council (USGBC). Moreover, ECO LAB won the grand prize at the Architectural Culture Awards, arguably Korea's most prestigious architecture award. Built with 11 eco-friendly technologies and 60 new innovations, ECO LAB is a state-of-the-art energy-saving, eco-friendly building. Since its completion, ECO LAB has been continuously monitored in order to ensure optimal efficiency of the applied technologies during its maintenance operation. The monitoring process involves carefully selected 49 technologies of the 101 that were applied to the building, and monitoring them on monthly, quarterly, semi-annual, and irregular bases. ECO LAB has been built with the aim of reducing energy consumption by 44%, water consumption by 63%, and greenhouse gas emissions by 33%. The monitoring conducted in 2011 revealed that the building met the targets for energy and water saving targets, while exceeding the initial greenhouse gas emissions reduction target by achieving 37% reduction.

**Eco-Friendly Functions of ECO LAB**

**Saving Energy**

Built with highly energy-efficient triple-layer glasses, radiation-based air-conditioning system, floor aeration system, and LED lighting apparatuses, ECO LAB is 40% more energy efficient than typical buildings. On a quarterly basis, SK Chemicals remotely conducts the Building Energy & Water Management System (BEWMS) inspection to monitor and ensure the operation of building's energy efficient system. SK Chemicals is also a frontier in adopting technologies for renewable energy, including photovoltaic and geothermal generation. In just two months its first operation, ECO LAB generated 2,321kwh and 1,720kwh of energy from October to December 2010, through photovoltaic and geothermal generators, respectively, which, together, can run 130 computers for an entire month (300W each, eight hours per day). SK Chemicals intends to expand these renewable power generation capacities in the future based on systematic monitoring and management.

**Saving Water**

ECO LAB reduces water usage by 60%, as a result of installing water-saving devices such as water efficient faucets, shower heads and water-free toilets, as well as implementation of other innovative technologies.

**Preventing Pollution**

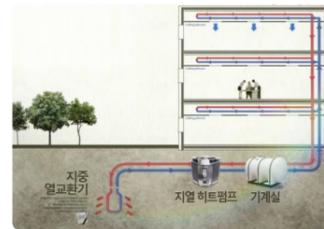
The rooftop surface of ECO LAB is 70% green space, while using highly reflexive materials prevents the heat island effect. The building is also equipped with ozone safe halon- and Freon-free freezers and fire extinguishers.



**Eco-friendly Building Certificate**



**Renewable Energy Generation System**



**Water Cycle System for Protecting Water Resources**



**What Is the Green Point System?**

Since 2010, SK Chemicals has been implementing Green Point System as an effort to encourage employees to become more environmentally conscious and to establish environmental management as a core pillar of its corporate culture. The system converts employees' various environmentally friendly activities—including, but not limited to, saving energy and purchasing eco-friendly goods—into green points. The accumulated points are translated into monetary values, which the company matches and donates to environmental causes. The raised fund is used to promote environmental campaigns throughout society, helping citizens to participate in environmental protection and increase their happiness. The system also has its own website, on which employees can post and share eco-friendly ideas and information.

**Activities Up for Green Points**

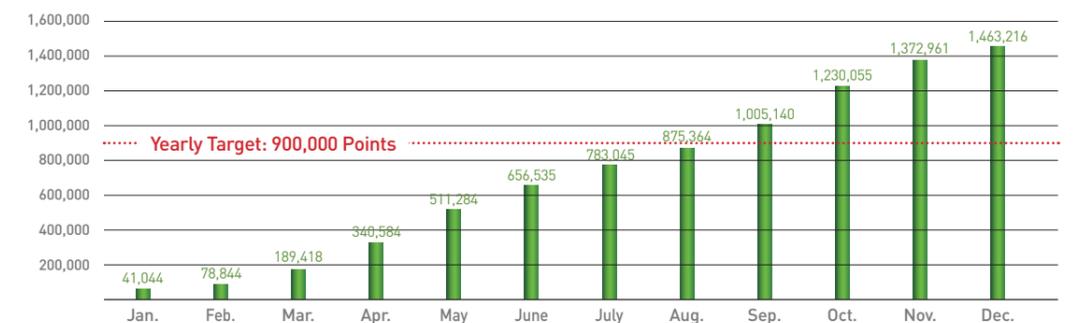
Type	Event	Activity	Points
Group	Vegetarian Day	Vegetarian food throughout the company	472P/day
	Paper recycling	Collecting and measuring the amounts of waste paper to be recycled	0.28P/kg
	Food waste	Giving Green Stickers to employees who do not leave any food on their plates	1P/person
Individual	Sharing Comments	Posting on the Environmental Management bulletin board online	10P/post
	Carbon Meter	Calculating one's carbon footprint	50P/case
	Point Donation	Logging on to the Environmental Management bulletin board and donating one's points to a cause	1P/donation
	Green Actions	Participating in contests for eco-friendly innovative ideas, purchasing eco-friendly goods, attending exhibits, or performances on environmental themes, etc.	100P/event
	Green Movies	Attending quarterly screenings of movies on environmental themes	100P/screening
	Eco-friendly Service	Participating in eco-friendly volunteer works, whether inside or outside the company	100P/h

Employees can earn their Green Points by posting on the company bulletin board their own thoughts or other published articles on environmental themes, by engaging and encouraging family members to participate in "Green Actions" such as purchasing eco-friendly goods and attending environment related exhibits, and concerts, and by attending the quarterly screenings of movies and documentaries on climate change and environmental responsibilities of companies.

**Green Points Saved in 2011**

SK Chemicals initial target was to accumulate 900,000 Green Points in 2011 (400 points per employee). Due to sustained interest and enthusiasm of SK Chemicals employees, the company easily met the target early on Sept. 8, 2011. By the end of the year, the company had accumulated a total of 1,463,216 points.

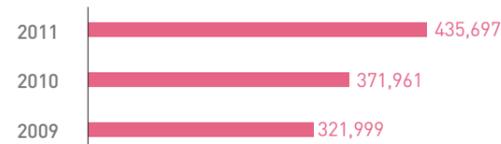
**Number of Green Points Accumulated by Month, 2011**



## Controlling Raw and Other Materials

The major raw and other materials involved in manufacturing processes at SK Chemicals include TPA, DMT, EG, CHDM, and other various catalysts. SK Chemicals always seeks to increase effectiveness of its materials through production management, such as monitoring material usage, material inventory and material input and output. Effective utilization of resources contributes to the sustainability of limited natural resources and minimizes the environmental impacts of using those resources. In 2011, SK Chemicals used a total of 435,697 tons of raw and other materials, up 17% from the previous year.

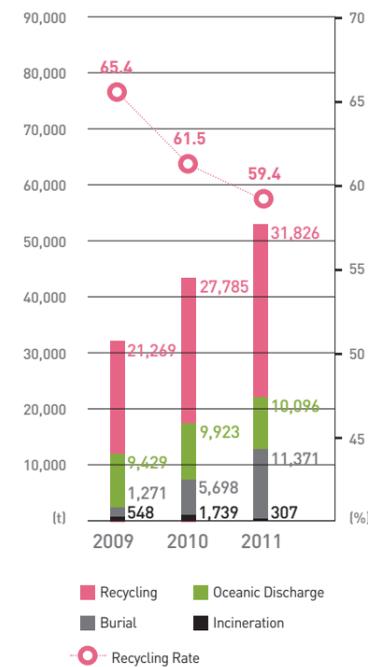
● Amounts of Raw and Other Materials Used (Unit: ton)



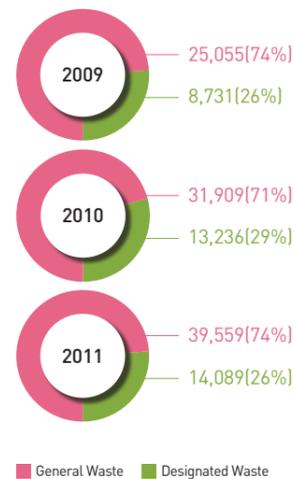
## Controlling Waste Material

Pursuant to the Waste Material Disposal Act, SK Chemicals ensures that the disposal of all waste materials produced by its plants is conducted in the legal, most hygienic manners. The company vigorously monitors disposal processes thoroughly to prevent secondary contamination. In addition, the company plans to pursue more innovative methods of reducing waste material by turning flies (ashes from incineration) 100% into new products, by reducing the sludge with a new filter press in the water quality control office, and by recycling waste resins.

● Amount of Waste Material by Disposal Type



● Amounts of Waste Material Produced (Unit: ton)

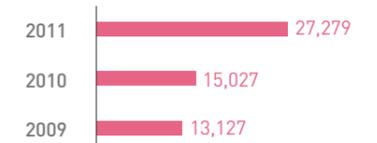


The amount of waste material from the company headquarters is not represented in these diagrams.

## Controlling Hazardous Chemical Substances

The SK Chemicals plant at Ulsan inevitably utilizes various hazardous chemicals as a part of its manufacturing procedure. Major hazardous chemicals used, which include methanol, sodium hydroxide, ethyl acetate, chloroform, toluene, and xylene, are either directly injected during the manufacturing process or used as reagents, pH modifiers or for other purposes. In order to safely handle these hazardous chemicals, SK Chemicals is safely managing these substances and in accordance with storage facility standards, by establishing Regulation on Controlling Hazardous Chemical Substances and delegating different departments with necessary responsibilities and authorities. SK Chemicals also appoints multiple hazardous substances managers to strengthen the monitoring process, as well as conducting weekly training sessions of employees handling these substances and inspections of facilities and equipment.

● Amounts of Hazardous Chemicals Used (Unit: ton)



Only the amounts of hazardous chemicals used at the Ulsan plant are represented here.

In 2011, SK Chemicals used 27,278 tons of hazardous chemicals. The significant increase in the amount used from the previous year can be accounted for by the increase in the production of Eco Prime, the eco-friendly biodiesel, which doubled the usage of methanol, source of the biodiesel.

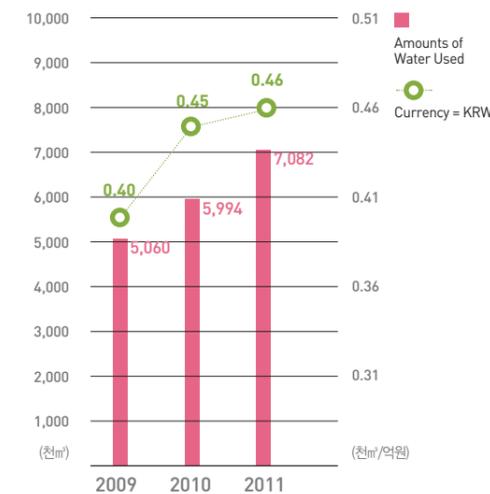
By safely handling and using chemicals used in the plants by establishing regulations on handling chemical substances, SK Chemicals strives to prevent pollution and minimize direct and indirect effects on employee health. The company also manages information through its Safety, Health, and Environment Quality (SHEQ) system.

SK Chemicals has also established and complies with its Regulation on the Disposal of Laboratory Waste Materials, which categorizes waste and provides proper disposal procedure, to prevent contamination and ensure the safety of laboratories and their personnel. Of the chemical waste generated in laboratories, reagents are discarded properly, while the waste water is processed through the company's own waste water treatment facilities.

## Controlling Water Consumption and Wastewater

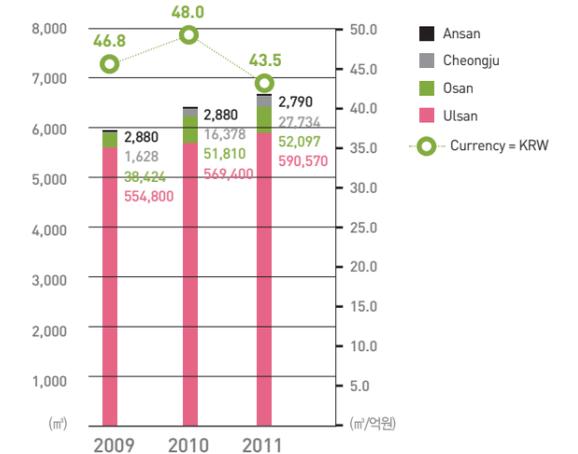
Each SK Chemicals plant obtains its required industrial water from the local water supply. So far, the water usages of the plants did not have any significant impact on the local water supply and sources. None of the plants use groundwater, while the corporate headquarters and research center partially utilize the collected rainwater for water supply. The wastewater generated by the plants is either treated by on-site treatment facilities or re-treated at the local sewage treatment plants.

● Amounts of Water Used



•None of these plants uses groundwater.  
•The corporate headquarters occasionally uses rainwater, the amount of which is not represented in this graph.

● Amounts of Wastewater



•This graph does not represent the amount of wastewater generated by the corporate headquarters.  
•The wastewater produced by the Ulsan plant is first processed through the on-site wastewater treatment facility before being discharged into the East Sea. The wastewater from the Ansan and Osan plants is carried to the local wastewater treatment plants, while that of the Cheongju plant is discharged into the sewage treatment plant within the industrial cluster in which the plant is located.

● Concentrations of Wastewater Discharged by the Plants

Ulsan Plant (Unit: ppm)

Item	2009	2010	2011	
BOD	Conc. at discharge	4	4	4
	Legal max.	10	10	10
COD	Conc. at discharge	22	28	20
	Legal max.	40	40	40
SS	Conc. at discharge	6	6	4
	Legal max.	10	10	10

Ansan Plant (Unit: ppm)

Item	2009	2010	2011	
BOD	Conc. at discharge	14	10	21
	Legal max.	120	120	120
COD	Conc. at discharge	33	11	30
	Legal max.	130	130	130
SS	Conc. at discharge	22	17	21
	Legal max.	120	120	120

Osan Plant (Unit: ppm)

Item	2009	2010	2011	
BOD	Conc. at discharge	10	10	5
	Legal max.	120	120	120
COD	Conc. at discharge	17	10	10
	Legal max.	130	130	130
SS	Conc. at discharge	23	6	9
	Legal max.	120	120	120

Cheongju Plant (Unit: ppm)

Item	2009	2010	2011	
BOD	Conc. at discharge	131	180	132
	Contract max.	250	250	250
COD	Conc. at discharge	59	205	114
	Contract max.	250	250	250
SS	Conc. at discharge	142	41	135
	Contract max.	50	50	50

The wastewater generated by the Cheongju Plant goes straight to the wastewater treatment facility within the industrial cluster where the plant is located. The "contract maximum" indicated in the table refers to the maximum levels of concentration of wastewater to be admitted into the treatment facility subject to the contract. Where the concentration levels exceed the contract maximum levels, the treatment fees are to be adjusted.

## Preventing Soil Pollution

The importance of systematic efforts to prevent soil pollution can hardly be emphasized more as soil pollution not only presents serious threats to the local environment, but also negatively affects the real estate values. SK Chemicals thus is enhancing pre-pollution monitoring in and around the sites of its plants. The Osan plant recently shut down its boiler fuel storage system with high risk of soil pollution due to increasing concerns, while simultaneously replacing the fuel source from bunker-C oil to LNG to minimize any potential soil pollution. The Cheongju plant had its chemical processing facilities inspected by the Korea Occupational Safety and Health Agency and was judged as exempt from further soil pollution and leakage tests and the Ulsan plant also passed the soil pollution test by the Korea Testing Laboratory.

## Preventing Noises and Odors

SK Chemicals ensures that all its plants meet the noise and odor control standards set by legislations. SK Chemicals also hires consulting firms to share the information of its compliance with regulatory laws with the municipal authorities and citizens of the local communities. The efforts of SK Chemicals include the recent installation of noise-preventing and deodorizing facilities at the Osan plant to completely block any noises or odors that may be generated by the freezer containers and research labs from reaching the locals. In this process, SK Chemicals conducted tests to determine whether the noise and odor levels along the boundaries of the plant site exceed the legal maximum. Based on the test results, the plant installed noise silencers, noise-proof rooms, and an active carbon absorption tower (with a processing capacity of 80Am<sup>3</sup>/minute).

## Preventing Ozone Depletion

Although CFCs, HCFCs and other coolants used in the SK Chemicals plant destroy the ozone layer. They are only naturally discharged into the air in minute, insignificant quantities. Thus, SK Chemicals does not have separate plans for reduction of its ozone depleting chemicals. Aside from these coolants, there are no other ozone depleting chemicals in the production process.

## Preventing Air Pollution

SK Chemicals regularly monitors the concentrations of the air pollutants it generates using automatic meters. It also operates the tele-monitoring systems (TMS) that measure around the clock the emissions from these air pollutants, which the company self-monitors. SK Chemicals also strives to reduce the emission of generated air pollutants by installing air pollution control equipments and by switching to more eco-friendly fuels.

● Concentrations of Air Pollutants Discharged by the Plants

Ulsan Plant

Item	Unit	2009	2010	2011	
NO <sub>x</sub>	Discharged	ppm	151	98	79
	Legal max.	ppm	200	200	200
SO <sub>x</sub>	Discharged	ppm	88	73	50
	Legal max.	ppm	180	180	180
Dust	Discharged	mg/Sm <sup>3</sup>	6	7	5
	Legal max.	mg/Sm <sup>3</sup>	100	100	100

Ansan Plant

Item	Unit	2009	2010	2011	
NO <sub>x</sub>	Discharged	ppm	161	166	169
	Legal max.	ppm	200	200	200
SO <sub>x</sub>	Discharged	ppm	15	17	17
	Legal max.	ppm	180	180	180
Dust	Discharged	mg/Sm <sup>3</sup>	15	11	10
	Legal max.	mg/Sm <sup>3</sup>	50	50	50

Osan Plant

Item	Unit	2009	2010	2011	
NO <sub>x</sub>	Discharged	ppm	24	30	0
	Legal max.	ppm	200	200	200
SO <sub>x</sub>	Discharged	ppm	14	2	0
	Legal max.	ppm	180	180	180
Dust	Discharged	mg/Sm <sup>3</sup>	9	10	7
	Legal max.	mg/Sm <sup>3</sup>	100	100	100

Cheongju Plant

Item	Unit	2009	2010	2011	
Dust	Discharged	mg/Sm <sup>3</sup>	8	8	0
	Legal max.	mg/Sm <sup>3</sup>	100	100	100

Given its nature, the Cheongju plant generates no NO<sub>x</sub> or SO<sub>x</sub>.



## **SK Chemicals** and **Society**

SK Chemicals respects the values of our society.  
As a corporate citizen, SK Chemicals will continue to play its part in ensuring the equitable growth of our community, improving the quality of life for all, and reducing the socioeconomic inequalities.

# 5. Organization

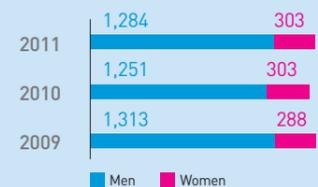
- Current Statistics on Employment
- Development Human Resources
- Fair Evaluation and Rewards
- Employee Safety and Health
- Protecting Labor Activities
- Work and Life Balance

## Current Statistics on Employment

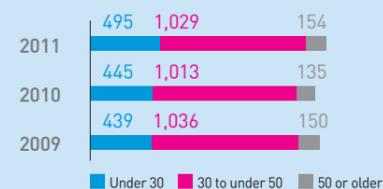
Diversity among employees is a key to the success of any organization. SK Chemicals thus practices a systematic, scientific method of screening and selecting employees, completely eliminating elements of discrimination on the basis of sex, religion, and race from the first step of job application. SK Chemicals also hires its employees only on the basis of their merit and potential, which are based on measures shown in their job application, examination results, and interviews. It is this potential- and merit-oriented system of hiring that forms the cornerstone of SK Chemicals' strategy for promoting diversity. Currently, the most pressing issue the company faces in promoting diversity is hiring of women. Acknowledging that the traditional, male-centered business culture and working conditions in Korea have consistently hindered the success of qualified, capable women talents, SK Chemicals adheres to all legislations and regulations that enable women to maintain balance between their family and work. Providing the necessary measures such as maternity and childcare leaves, and developing a corporate culture that pursues the balance of work and life, SK Chemicals seeks to incorporate more women into its workforce and improve the workforce diversity.

The company also follows its policy of notifying the employees potentially affected by major business decisions of the changes likely to be made to their employment status at least three months in advance.

### No. of Employees and Gender Ratio



### Employee Distribution by Age



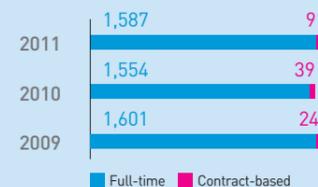
### Gender Ratio on the Board (Directors or above)

	2009	2010	2011
Men	24	25	28
Women	-	1	1

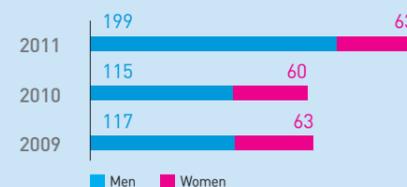
### No. of Employees with Disabilities

	2009	2010	2011
No. of Employees with Disabilities	19	17	16

### Employee Distribution by Employment Type



### Newly Hired Employees



### No. of Retired Employees & Employee Turnover Rate



The number of retired employees does not include employees who have been transferred to subsidiary companies of SK Chemicals.

## Developing Human Resources

### Ideal Employee

The ideal employee of SK Chemicals is a "warm professional." To be regarded as a "warm professional", an employee must have her self-esteem, a sense of community, as well as mutual respect for each other. At the same time, she must also have a good command of her work, be able to set challenging goals, follow through on the plans to meet her goals, and share her knowledge with others. The warm professionals SK Chemicals strives to achieve in its employees are people who share their dedication of promoting better health for all humankind and protecting the natural environment, have clear vision of happiness and success, and embark on every challenge they face with passion and enthusiasm.

**Pride:**  
A warm professional is convinced that her work contributes to happiness and a better world for all, based on clear understanding of the meaning and value of her work.

**Sense of Community:**  
A warm professional has a strong sense of solidarity with her coworkers and workplace, and commits herself to the values of the organization.

**Mutual Respect and Teamwork:**  
A warm professional seeks mutual respect and benefits, actively recognizing others' roles and talents based on her deep trust and interest in them.

**'Warm'**

Pride of one's own work  
Sense of community  
Mutual respect and teamwork

**'Professional'**

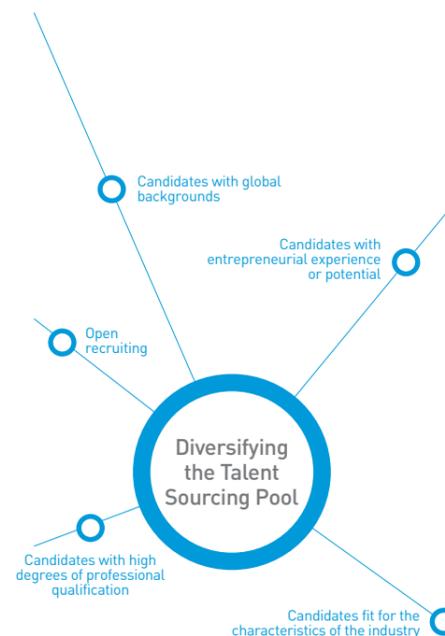
Good command of one's work  
Setting challenging goals  
Achieving goals thoroughly and joyfully  
Sharing knowledge

**Good Command of One's Work:**  
A warm professional always does her best to gain professional knowledge and better understanding of her clients and the market, as well as ways to improve her performance in achieving her goals.

**Setting Challenging Goals:**  
A warm professional always seeks to surpass expectations, setting higher goals for herself and ceaselessly trying to achieve them.

**Achieving Goals Thoroughly and Joyfully:**  
A warm professional masters herself in trying to achieve her goals and pursuing them with passion and enthusiasm for the process itself.

**Sharing Knowledge:**  
A warm professional is active in summing up her understanding and experience and sharing them with the entire organization, helping not only herself but also her coworkers to become more capable.



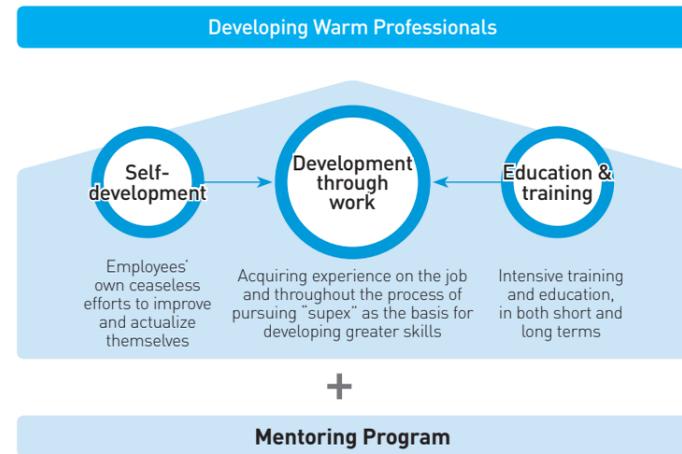
### Talent Recruiting Strategy

In order to attract not only hardworking individuals, but also the creative and the adventurous, SK Chemicals strives to acquire talented pool of employees by maintaining a talent sourcing portfolio. One aim of this portfolio is to enable recruitment of daring, original, innovative talents who can think outside the box. Another is to provide scientific designed tools capable of observing and measuring diverse aspects to thoroughly verify each candidate's potential for success. SK Chemicals also continually trains company specialists on essay reviews and job interviews to strengthen its human resource acquiring capabilities. In addition to advancing the recruitment and hiring process, SK Chemicals provides various internship opportunities, allowing potential candidates to explore a greater range of work and to discover their aptitudes and potentials. These internships also give the company opportunities to observe potential candidates and their performance longer, thereby enabling the company to acquire and hire the "right people" effectively.

## Employee Training Programs

Since the beginning, with the belief that the source of the company's competitiveness lies with the people, SK Chemicals has been striving to enhance the capacities of its employees, requiring that at least 10% of its entire workforce is in training at different times all year round. Based on this faith in human resources, SK Chemicals has been increasing its investment in employee training programs, even as the company struggled through restructuring and economic downturns.

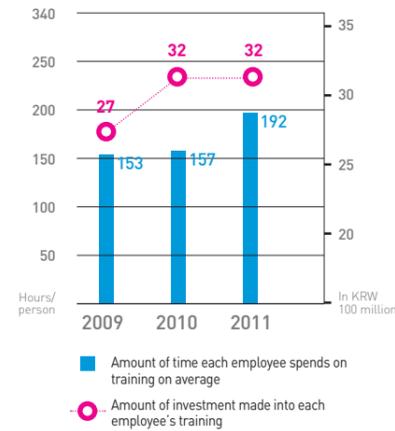
To nurture "warm professionals", the vision of its employees, SK Chemicals provides a wide range of short-term and long-term training programs, with on-the-job training (OJT) program as the basis, as well as a mentoring system in which exemplary senior employees are selected as mentor to coach junior employees as a role model, to maximize the effects of the OJT and self-development programs.



The training programs at SK Chemicals can be generalized into the selected programs and the new employee training programs. SK Chemicals provide full spectrum of quality training programs, including language classes, job-specific training, global capacity development, academic degrees, and many more. Employees selected for long-term training, including opportunities for pursuing academic degrees, enhance their capabilities by attending various schools and professional organizations both in Korea and abroad, during which SK Chemicals pay not only the wages, but also support employees' tuitions and living expenses throughout the training periods, thus enabling the employees to effectively focus on their studies.

The journey for human resource development begins as the employees join SK Chemicals. New employees are given introductory training that lasts between one and four months, depending on their jobs. In these programs, the employees learn not only the skills and information necessary for their jobs, but also learn the importance of communication, leadership, cooperation skills and trust while working on group projects. By engaging in volunteering and providing opportunities for self-reflection, SK Chemicals strives to prepare its employees not only for their work, but for their lives as well.

### Training Time and Investment



### SUPEX ("Super Excellent"):

"SUPEX" is the word SK Chemicals wants its employees to attain. It is impossible to reach this level by only relying on conventional thinking or activities. SUPEX employees are masters at thinking outside the box, making diverse new attempts, and handling their jobs with a perfectionist's dedication.

A scene from new employees' training: creating an artwork together



### Training Scheme

		Directors	Team Chiefs	Deputy Chiefs	Section Managers	Project Managers	
For New Employees	Hi-po	GDLP Short-term Director Training/Coaching Training	Hi-po Team Chief Training (HLP/GLP)	Degrees abroad (MBA, R&D)	Degrees in Korea (MBA, R&D)	GFP	
	Job Capacity	Director Capacity Training	Job Capacity Training (mini-MBA, short-term)	Intensive Language Training (English, Chinese)			
General	Job Capacity Training	MDP Leadership W/S	Team Chief Capacity Development Program	SK Capacity School	R&BD Training		
	SKMS	<ul style="list-style-type: none"> <li>Directors Workshop</li> <li>New Director Training</li> <li>Scouted Director Training</li> </ul>	SKMS Practical Capacity Reinforcement Training (Team Chiefs Workshop) New Team Chief Training	Team-by-Team SKMS Practical Capacity Reinforcement Training	Training for New/Experienced Employees	SKMS/SK History (On-line)	
	Specific to Positions/Ranks	New/Scouted Director Training	Team Chief Leadership Training				
		Job Interview Specialist Training Job Evaluator Training		Training for New/Experienced Employees	Marketing Training	In-company Instructor Development	Online/Reading Training

## Fair Evaluation and Rewards

### Fair Performance Evaluation

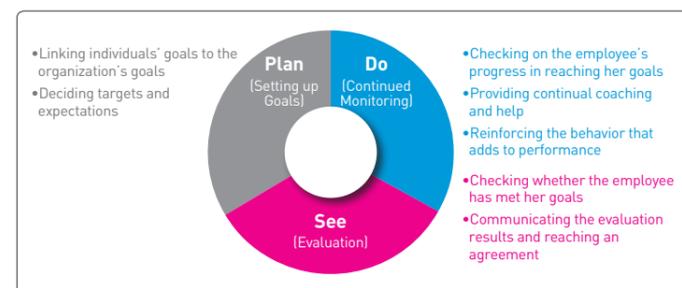
The performance evaluation and reward systems at SK Chemicals, based on its vision of "sustainable performance-orientation," aim to create an exciting, inspiring workplace for the employees and organization by providing challenging goals and through providing opportunities to develop necessary capacities and incentivizing with appropriate rewards and opportunities.

Development of a rational and fair evaluation system is essential in realizing the vision of "sustainable performance-orientation." As a tool for managing and coaching performance of its employees, which aim to contribute to individual and organizational improvement on the basis of accurate identification employee capabilities and performance, SK Chemicals operates Performance Evaluation & Coaching System (PECS).

The evaluation process consists of (1) goal setting, (2) in-progress examination, and (3) final evaluation. Throughout the three stages, the evaluator and the evaluated remain in ongoing communications to ensure fair and objective evaluation results.

Such an evaluation process takes both the potential and performance of the employee into account, producing a final score and evaluation rank. These scores and rankings are factored in the promotion and salary raise process, and company sponsored training opportunities. Therefore, the evaluation system at SK Chemicals includes various tools and tips geared toward ensuring the most objective and fair results possible, including the calibration session and evaluation auditing at the end of each evaluation stage. Once the final results are decided, each employee has individual meetings for feedback, in which the employee's strengths and weaknesses are explained and plans are established to supplement the capabilities of the employee, in order to enhance the performance.

Through continued training of evaluators, SK Chemicals improves awareness and evaluation capacities of the evaluators, and engages in involving other employees into the evaluation process to increase the understanding of its evaluation system.



### Fair Rewards

Based on honest and fair evaluation, the rational yet strict differentiated rewards scheme of SK Chemicals incentivizes by rewarding the more productive employees based on their merit and by providing opportunities for less productive employees to enhance their potential and capacities. The company strives to keep its reward system competitive to other competitors and based on the management goal achievement progress. By rewarding not only through financial incentives but also through non-financial incentives, (e.g. pride, sense of fulfillment, recognition, clarified vision, etc.), SK Chemicals supports employees to enjoy their work and pursue the company's vision of seeking sustainable performance-orientation.

### ● Sustainable Performance-Orientation

Creating a virtuous circle of an exciting, inspirational workplace in which employees and the company grow together

- Ensuring the growth of both the organization and the individuals;
- Reinforcing employees' motivations and capacities;
- Leveling up the employees' capacities by applying positive, upbeat pressure.



A performance-oriented human resources development system that seeks the growth of the organization

- Pursuing challenging, yet achievable goals;
  - Evaluating employees' progress in achieving goals;
  - Providing rewards/promotions depending on evaluation results.

### ◀ SK chemicals PECS

(Performance Evaluation & Coaching System)

### ● Safety and Health Management SHEQ System



### ● Emergency Record

	2009	2010	2011
No. of emergency accidents	0	1	1
No. of fatalities	0	1	0

In 2010, one person passed away and was crashed under heavy objects while unloading cargoes.

## Employee Safety and Health

### Safety and Health System

SK Chemicals enforces a safety and health system for the employees throughout its organization. The Ulsan plant, in particular, has received a publicly recognized certificate, OHSAS 18001, for its safety and health management system. The company identifies, examines, and improves risk factors all year round, and ensures employees' safety and health at each plant by mandating that it performs top patrol rounds (twice a month) and OK Patrol rounds on a regular basis. The company also submits itself to the inspection by the Korea Occupational Safety and Health Agency every year in order to ensure the effectiveness and transparency of its safety and health system.

### Safety and Health Committee

The company also thinks it absolutely crucial to let the employees, the direct stakeholders of the company's safety and health management, to participate in the system themselves through the Safety and Health Committee. SK Chemicals therefore uses the committee to promote employees' safety and health in a more effective manner. The committee meets to review and decide on important matters pertaining to occupational safety and health every quarter. Comprising of equal numbers of employees and users, the committee serves to ensure and improve employees' safety and health at workplace.

### Safety and Health Training

Training and education is a critical part of the safety and health system at SK Chemicals. The company provides diverse programs and courses tailored to the characteristics and situations of each plant and office, which consist of different goals and audience. The Ulsan plant conducts monthly general safety and health training for its employees, in addition to providing performance and leadership improvement courses for supervisors and managers, PSM training, safety training for new and transferred college-graduate employees, and training for managers of fire-extinguishing and other safety facilities, at least once a year. The plant also cooperates with the Ulsan Fire Department to provide environmental safety training three times annually. The MSDS department conducts GHS training program annually, while each department receives public health training (11 times a year) and emergency handling training (three times a year).

The health and safety training at SK Chemicals also extends to the new visitors or delegates from partner businesses and contractors, because ensuring complete safety of each plant and office requires compliance of everyone with the safety and health policies. Training for visitors from partner businesses are conducted daily. SK Chemicals also assists employees' efforts to quit smoking through its Quitting Smoking clinic, the centerpiece of company's anti-smoking campaigns and programs.

### Emergency System

Fire-fighting organization and procedure have been established in each and every SK Chemicals plant to react to fire-related emergencies as quickly and effectively as possible. In case of a fire, emergency contact networks are in place to minimize environmental impact and destruction to life and property, and possess systematic capacity to react to fire through contacting communication team, fire-fighting team, rescue team, and escape-aid teams using hotlines.

## Protecting Labor Activities

Based on mutual respect and trust, there has not been a single incident of labor dispute between the labor union and the management at SK Chemicals over the last four decades since its establishment in 1969. Based on the foundation of trust and cooperation between the labor and management, the labor union has been playing a pivotal role as a central pillar in ensuring the stable growth of the company. Through successful labor-management agreements, SK Chemicals managed to resolve challenges and remained productive even during the most severe difficulties, when SK Chemicals had to restructure and lay off a large number of employees, a first of its kind for Korea, in 1996 and when the company was struggling to overhaul its business portfolio through spinning off its textile business into a separate company, Huvis.

Currently, SK Chemicals is moving beyond seeking stability in labor-management relations, by developing a performance-oriented labor-management relations model, based on the management performance, thereby establishing a shared framework between labor and management for a common goal.

Thanks to these and other efforts, SK Chemicals won the Grand Prize at the Korea Labor-Management Relations Awards in February 2006, as well as the Grand Prize at the Forbes Quality Assurance Awards for Labor-Management Reconciliation in September 2009. These awards publicly displayed the strength and cooperation between labor and management of SK.

Since 2007, SK Chemicals has been renewing the Labor-Management Peace Declaration annually. In April 2009, it also announced One Heart, One Will Declaration, demonstrating the unity between the employees and the management and the resolve to ensure the company's continued growth amidst the global financial crisis. In October 2009, the labor union also decided to relegate the entire authority to the company management on deciding wages and collective bargaining activities. As of the end of 2011, 32.9% of all SK Chemicals employees in Korea are eligible for collective bargaining.

This remarkable labor-management relation is the result of the continuous and honest conversations between the two parties. SK Chemicals keeps all channels of communication with the labor union open, from maintaining the official communication channels to organizing the Labor-Management Athletic Championship and labor union executive retreats, holding labor-management talks and working-level meetings, and operating online bulletin board, and electronic company newspaper. These represent the systematic efforts SK Chemicals makes to ensure continued improvement of labor-management culture.

While labor union activities are protected under relevant legislations including the Labor Union and Labor Relations Adjustment Act, the Act on Promoting Workers' Participation and Cooperation, SK Chemicals has additional systems to protect union and employee rights in "Title 1: General Provisions" and "Title 2: Labor Union Activities" in the Collective Bargaining Agreement.

Forbes Quality Assurance Excellence Awards, September 2009



Labor-Management Peace Declaration, 2007



## Work and Life Balance

To maximize the company performance through customer satisfaction and happiness, it is first and foremost necessary to look after the happiness of the employees and create a workplace that is both exciting and inspiring to work. Therefore, SK Chemicals promotes the physical and psychological health of employees and helps them improve their relationships with their families, thereby enabling them to maintain a healthy balance between their personal lives and work. Our major programs in this area include the Leave Work On Time events, UB Care Fortune Service, classical music concerts, tours around ECO LAB for family members of the employees, and retreats for strengthening both the body and the mind. In addition, SK Chemicals provides IT classes for employees' children during school vacations, supports club activities of its employees, operates a fitness center inside the company as an effort to foster productive and workable environment for its employees through health and family care.

These diverse programs and activities to innovating corporate culture improves the quality of life for the employees as well as assist in providing an opportunity to recharge and pursue self-improvement, these benefits in turn, leads to enhanced productivity, thereby making SK Chemicals more competitive.

### Major Programs for Work and Life Balance

<b>Leave Work On Time Events</b>	SK Chemicals has designated every Wednesdays as Leave Work On Time day in order to encourage its employees to spend more time with their family or to invest time in self-development, at least for one day a week.
<b>UB Care Fortune Service</b>	Developed in conjunction with UB Care, a subsidiary company, the systematic health management program is both preventative and therapeutic, and delivers customized healthcare support for all employees. The program subjects employees to a comprehensive health and behavioral evaluation, and provides programs to keep the employees at their best physical and psychological conditions based on the individual results. An in-house doctor is on standby at the SK Chemicals headquarters, and mobile and traveling clinics provide the necessary care for the employees at the plant sites.
<b>Classical Music Concerts</b>	Garium, a 230 people capacity amphitheater within the SK Chemicals headquarters and equipped with the latest-technology, hosts a classical music concert every Thursday evening, nurturing cultural sensibility for the employees and their family members.
<b>Family Tour around ECO LAB</b>	The program, designed mainly for the children of SK Chemicals employees, takes them around ECO LAB, Korea's most innovative and eco-friendly architecture on Saturdays, and informs the importance of environmental awareness through eco-friendly board games.
<b>Retreats</b>	The retreat programs for both the body and the mind are not only available for the employees, but also their family members, providing opportunities to refresh and recharge the body and the spirit.

### Number of Employees on Childcare Leave

	2009	2010	2011
No. of employees that have used childcare leaves	4	6	13
Rate of employees who returned from childcare leaves	100%	100%	100%

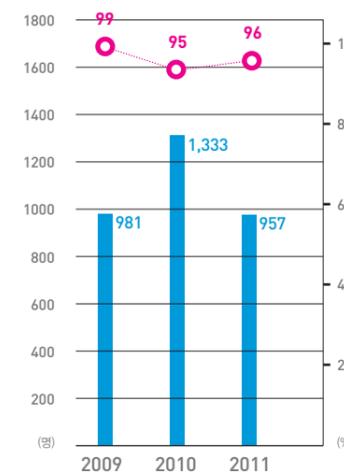
### Family Tour around ECO LAB



### Classical Music Concert



### ERegular Medical Checkups for Employees



■ No. of employees eligible for medical checkup  
 ○ Rate of employees receiving medical checkup

Recipient Rate Formula: dividing the number of employees actually receiving medical checkup by the total number of employees eligible for medical checkup

# 6.

## Partnership and Mutual Growth

- System for Mutual Growth with Partner Businesses
- Support Programs

### System for Mutual Growth with Partner Businesses

As a part of the fundamental vision and principle of SK management philosophy to deliver happiness to all its stakeholders, SK Chemicals continuously seeks ways for realizing mutual benefits and growth with its partner businesses through forming a fair trade culture and enhancing SK Chemicals' market competitiveness. As a part of this effort, SK Chemicals is planning to sign an agreement with its partner businesses on enhancing fair trade and mutual growth in 2012. The purpose of Mutual Growth Agreement is to establish self-enforcing fair trade regulations and to build the foundation for mutual growth between small and medium-sized businesses and large companies in subcontracting, raw materials and intermediate goods supplying, and service providing transactions. SK Chemicals will utilize this agreement as an opportunity to expand the range of substantive benefits the company provides to its partner businesses.

SK Chemicals is currently providing diverse forms of support and benefits for partner businesses, including financial assistance, adjustments of payment conditions, training and education for their employees, and other programs.

#### Mutual Growth Strategy



#### Major Tasks of Mutual Growth Strategy



#### SK Mutual Growth Academy



## Support and Benefits

### Financial Assistance

SK Chemicals, through its SK Mutual Growth Fund, provides loans and financial assistances to partner businesses at favorable interest rates. The SK Mutual Growth Fund has raised approximately KRW 6.7 billion to date, providing loans to partner businesses at preferred interest rates than the rates available on the market. In 2011, more than ten partner businesses took out loans from the SK Mutual Growth Fund. SK Chemicals intends to diversify the forms and modes of financial assistance it provides to its partners in 2012. The Mutual Growth Fund, created in cooperation with financial institutions, will significantly increase its capacity in 2012 so more partner businesses can benefit. SK Chemicals is also reviewing plans to link partner businesses with other financial institutions for loans and financing, as well as plans to make direct loans to partner businesses.

### Adjusting Payment Conditions

In an effort to enhance cash flows for partner businesses, SK Chemicals has increased the amount of transactions it conducts in cash. SK Chemicals raised the limit of cash transactions to KRW 30 million per transaction with each partner business in 2011 from KRW 10 million in 2010. This increased the ratio of cash transactions, helping partner businesses save their financial costs. SK Chemicals also shortened the waiting period before payments, enabling partner businesses to receive their payments within 10 days.

### Training Support for Human Resources Development

The competitiveness of partner businesses directly relates to that of SK Chemicals, which makes training support for those partner businesses a central factor in the mutual growth strategy of SK Chemicals. In 2011, SK Chemicals organized 67 CEO seminars and 11 sessions of the Management Development Program (MDP) for representatives and delegates from partner businesses through operating SK Mutual Growth Academy. In addition to these off-line educational programs, SK Chemicals supported human resource development by also providing online programs for partner businesses. The CEO seminars seek to enhance leadership and capacities of partner business leaders, providing the latest information on business administration, economy, organizational change and management, and domestic and international markets. The MDPs aim to enhance job-related capacities and skills of professionals, focusing on topics such as planning, finance, marketing, personnel, and management.

### Other Programs

Furthermore, SK Chemicals' amphitheater, is used to promote exchange and enhance interactions with partner businesses. In 2011, SK Chemicals invited partner businesses on two concerts held in the amphitheater, to enrich cultural experiences and to promote networking opportunities, as well as providing greater opportunities of cooperation through attending international expositions in tandem and CEO visit to overseas clients.

# 7. Social Involvements and Contributions

The corporate social responsibility (CSR) programs of SK Chemicals are designed to cater to the most pressing issues and agendas of local communities. The company provides an extensive range of support and benefits for the locals and natural environments.

## Support for Silver Theater

One of the representative CSR programs of SK Chemicals catering to human needs is the Silver Theater Support campaign. Since launching Silver Theater in 2009 as Korea's first theater for senior citizens, with the approval from Ministry of Employment and Labor as a certified social enterprise, SK Chemicals has been providing KRW 100 to 200 million annually for the operation of the theater and sponsoring its major activities. Silver Theater has become a flagship public space of culture for senior citizens in Korea.

## Supporting Compassion

Since January 2011, SK Chemicals has been sponsoring Compassion, an international non-government organization dedicated to children's welfare. When an individual employee donates to Compassion to support a single child, the company and the CEO each match the employee's donation to support three children per employee. As of the end of 2011, 110 employees have participated, raising a cumulative fund of KRW 180 million in total.

## Environment-Conscious CSR Programs

Flagship environmental friendly program of SK Chemicals is protection of wetland (river) ecosystems. The company has continued protection and purification of river systems across Korea, including the Unjungcheon River Wetland in Seongnam, the city in which ECO LAB is located; the Mipyeongcheon River in Cheongju; and ecosystems near the Ulsan Plant, including Cheoyong Park, Ganjeolgot, and Solmarugil Road.

## Rural Support Project

The Wellbeing Project of SK D&D involves producing and distributing organic agricultural produce through collaboration between SK Group and Ochang Agricultural Cooperative in Chungbuk Province. Through direct transactions between the rural communities and the consumers, the project enables the consumers to purchase safe and affordable quality agricultural produce. The Wellbeing Project, first initiated by SK Chemicals in 2005, has become an example of a well-designed program that helps to reduce the inequalities between urban and rural communities.

## Social Involvements

SK Chemicals, as a part of SK Group, is continuously participating and contributing to various social causes. In 2011, SK Chemicals donated KRW 600 million to the Pyeongchang Winter Olympics Hosting Committee, and another KRW 100 million to the Korea Disaster Relief Association. Furthermore, the company distributes briquettes to low-income families, holds fundraising bazaars, and distributes first-aid kits during the holiday season. As "talent contribution" has become a new trend in charity work throughout Korea, SK Chemicals is sharing its experiences and knowledge on marketing, human resources development, accounting, and legal service through SK Pro Bono Program with small and medium-sized businesses.

## Diverse Volunteer Activities and Charity Work

SK Chemicals employees annually volunteer in Gimjang, the kimchi preparing process, at the Seoul Community Rehabilitation Center, located in Gangdong-gu, Seoul, with each department additionally volunteering for various social causes, including supporting children of low-income households, and sponsoring schools for children with disabilities. In late 2011, SK Chemicals worked with City of Seongnam located in Gyeonggi-do Province to provide rice for low-income household residents.

### Diverse Volunteer Activities



### Environment-Conscious CSR Programs



APPENDIX

## Statement of Financial Position

[Currency: KRW]

		2009	2010	2011
<b>Assets</b>	<b>Current assets</b>	609,309,382,604	535,216,041,567	631,159,236,354
	(1)Quick assets	405,195,098,959	343,417,307,580	406,186,961,732
	(2)Inventory assets	204,114,283,645	191,798,733,987	224,972,274,622
	<b>Non-current assets</b>	1,389,509,725,811	1,276,447,881,372	1,402,592,304,383
	(1)Investment assets	430,113,572,879	782,933,144,411	818,859,308,854
	(2)Tangible assets	902,289,475,114	454,272,210,809	547,945,079,731
	(3)Intangible assets	20,344,541,183	32,532,901,342	27,850,538,457
	(4)Other non-current assets	36,762,136,635	6,709,624,810	7,937,377,341
	<b>Total assets</b>	1,998,819,108,415	1,811,663,922,939	1,811,663,922,939
	<b>Liabilities</b>	<b>Current liabilities</b>	773,011,493,636	707,999,275,486
<b>Non-current liabilities</b>		323,246,539,518	195,561,400,334	631,381,127,130
<b>Total liabilities</b>		1,096,258,033,154	903,560,675,820	1,111,625,536,346
<b>Capital</b>	<b>Capital stock</b>	118,300,860,000	118,300,860,000	118,300,860,000
	<b>Capital surplus</b>	298,542,940,219	145,530,430,546	145,530,430,546
	<b>Other capital items</b>	-78,109,038,677	-98,068,499,377	-98,068,499,377
	<b>Other accumulated all-inclusive income</b>	324,611,976,946	957,329,746	1,632,274,167
	<b>Earned surplus</b>	239,214,336,773	741,383,126,204	754,730,939,055
	<b>Total capital</b>	902,561,075,261	908,103,247,119	922,126,004,391
	<b>Total liabilities and capital</b>	1,998,819,108,415	1,811,663,922,939	2,033,751,540,737

## Income Statement

[Currency: KRW]

	2009	2010	2011
<b>Sales</b>	1,276,454,588,117	1,334,514,621,732	1,546,107,694,525
<b>Cost of sales</b>	990,721,290,848	1,037,383,909,381	1,245,669,454,486
<b>Gross margin</b>	285,733,297,269	297,130,712,351	300,438,240,039
<b>Selling and administrative expenses</b>	201,385,700,022	228,216,839,151	235,789,777,579
<b>Operating income</b>	84,347,597,247	68,913,873,200	64,648,462,460
<b>Non-operating income</b>	267,749,723,628	38,003,657,048	34,691,310,985
<b>Non-operating cost</b>	198,912,394,282	69,212,034,181	67,511,524,754
<b>Net income before taxes</b>	153,184,926,593	37,705,496,067	31,828,248,691
<b>Income tax</b>	28,727,894,103	-2,215,068,415	992,431,188
<b>Net income of the term</b>	124,457,032,490	39,920,564,482	30,835,817,503

The financial data of 2009 have been calculated using the K-GAAP, the accounting standard the company applied until that year. The financial data from 2010 and 2011, on the other hand, have been calculated using the current accounting standard, i.e. K-IFRS.

## Awards

Awarded by	Year	Award Title
Min. of Environment / Maeil Business Newspaper	2003	2003 Environmental Management Awards: "Green Partnership" Environmental Management Grand Prize (Suwon plant)
Min. of Environment	2006	Prime Minister's Award for Exemplar Environment Management Practices (Safety & Environment Team, Suwon plant)
Energy Mgmt. Corp.	2007-2009	Voluntary Compliance with Energy Agreements (Energy Efficiency)
Energy Mgmt. Corp.	2008	Best Practice Award for Reducing Fuel Cost (Suwon plant, for using methanol-mixed fuel)
Energy Mgmt. Corp.	2008	Best Practice Award for Saving Energy (Facility Assistance Team, Suwon plant, for installing desulfurization facilities)
Korea Economic Daily	2011	Korea Ethical Management Grand Prize (for "Environmental Management")
Korea Mgmt. Association Quality Assurance	2011	Global Standard Management Grand Prize (for "Green Management")
Korea Sustainability Investing Forum	2011	CDP Special Award - for Improving Performance
Korea Institute of Registered Architects	2011	Korea Architectural Culture Grand Prize ("Private Sector")

Global Green Management Grand Prize



CDP Special Award



Korea Ethical Management Grand Prize ("Environmental Management")



## Member Organizations

Organization	Year	Reason for Joining/Launching
Korea Chemical Management Association (KCMA)	1990	For sharing knowledge and information on how to handle and manage hazardous chemicals better
Environmental Preservation Association (EPA)	1991	For ensuring compliance with the new policies of the central and local governments on environmental preservation
Korea Environmental Engineers Association (KENVA)	1992	For promoting the exchange of information and technology on environmental preservation among environment specialists
Suwon 21	1998	For providing support and recommendations on improving the natural environment and conditions of Suwon
Korea Responsible Care Council (KRCC)	2000	For ensuring environmental, safety, and health management and coordinating related social campaigns
UNGC	2011	Voluntary agreement on fighting social issues, including human rights, environmental protection, and corruption

# GRI G3.1 Index

● Reported fully | ● Reported partially | ● Not reported

	Profile	Report Status	Pages	Remarks
Strategy & Analysis	1.1 Statement from the most senior decision-maker of the organization.	●	2, 3	
	1.2 Description of key impacts, risks, and opportunities.	●	8, 24, 28, 38, 50	
Organizational Profile	2.1 Name of the organization.	●	About this report	
	2.2 Primary brands, products, and/or services.	●	8, 26-28, 31	
	2.3 Operational structure of the organization, including main divisions, operating companies, subsidiaries, and joint ventures.	●	9	
	2.4 Location of organization's headquarters.	●	9	
	2.5 Number of countries where the organization operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report.	●	9	
	2.6 Nature of ownership and legal form.	●	9	
	2.7 Markets served (including geographic breakdown, sectors served, and types of customers/beneficiaries).	●	9	
	2.8 Scale of the reporting organization.	●	10, 50, 62	
	2.9 Significant changes during the reporting period regarding size, structure, or ownership.	●	No such changes took place	
	2.10 Awards received in the reporting period.	●	63	
Report Parameters	3.1 Reporting period (e.g., fiscal/calendar year) for information provided.	●	About this report	
	3.2 Date of most recent previous report (if any).	●	About this report	
	3.3 Reporting cycle (annual, biennial, etc.)	●	About this report	
	3.4 Contact point for questions regarding the report or its contents.	●	About this report	
	3.5 Process for defining report content.	●	4, 5	
	3.6 Boundary of the report (e.g., countries, divisions, subsidiaries, leased facilities, joint ventures, suppliers). See GRI Boundary Protocol for further guidance.	●	About this report	3.9 Where relevant, the method of obtaining/calculating the data has been explained.
	3.7 State any specific limitations on the scope or boundary of the report (see completeness principle for explanation of scope).	●	About this report	
	3.8 Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organizations.	●	About this report	3.10, 11 Since this is the first-ever sustainability report published by SK Chemicals, there is no previous report involved.
	3.9 Data measurement techniques and the bases of calculations, including assumptions and techniques underlying estimations applied to the compilation of the Indicators and other information in the report.	●	About this report	
	3.10 Explain any decisions not to apply, or to substantially diverge from, the GRI Indicator Protocols. Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement (e.g., mergers/acquisitions, change of base years/periods, nature of business, measurement methods).	●	N/A	
	3.11 Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report.	●	N/A	
3.12 Table identifying the location of the Standard Disclosures in the report.	●	64-68		
3.13 Policy and current practice with regard to seeking external assurance for the report.	●	About this report		
Governance, Commitments, and Engagement	4.1 Governance structure of the organization, including committees under the highest governance body responsible for specific tasks, such as setting strategy or organizational oversight.	●	11, 15, 18, 20	
	4.2 Indicate whether the Chair of the highest governance body is also an executive officer.	●	11	
	4.3 For organizations that have a unitary board structure, state the number and gender of members of the highest governance body that are independent and/or non-executive members.	●	11	
	4.4 Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body.	●	11, 56	
	4.5 Linkage between compensation for members of the highest governance body, senior managers, and executives (including departure arrangements), and the organization's performance (including social and environmental performance).	●		
	4.6 Processes in place for the highest governance body to ensure conflicts of interest are avoided.	●	11	
	4.7 Process for determining the composition, qualifications, and expertise of the members of the highest governance body and its committees, including any consideration of gender and other indicators of diversity.	●	11	
	4.8 Internally developed statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance and the status of their implementation.	●	6-8, 20, 21	
	4.9 Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental, and social performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles.	●	11	
	4.10 Processes for evaluating the highest governance body's own performance, particularly with respect to economic, environmental, and social performance.	●	11	
	4.11 Explanation of whether and how the precautionary approach or principle is addressed by the organization.	●	34, 38, 63	
	4.12 Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses.	●	63	
	4.13 Memberships in associations (such as industry associations) and/or national/international advocacy organizations in which the organization: * Has positions in governance bodies; * Participates in projects or committees; * Provides substantive funding beyond routine membership dues; or * Views membership as strategic.	●	63	
	4.14 List of stakeholder groups engaged by the organization.	●	4	
	4.15 Basis for identification and selection of stakeholders with whom to engage.	●	4	
	4.16 Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group.	●	4	
	4.17 Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting.	●	5	

● Reported fully | ● Reported partially | ● Not reported

	Disclosure on Management Approach	Report Status	Pages	Remarks
Economic (EC)	Aspects			
	Economic performance	●	10	<b>Market presence:</b> This report does not include SK Chemicals' overseas plants or offices. Once they become included in the scope of future sustainability reports, their activities and impact will be described in detail.
	Market presence	●	50	
Indirect economic impacts	●	60		
Environment (EN)	Aspects			<b>Biodiversity:</b> Because the Korean plants are located in regions without high levels of biodiversity, indicators of biodiversity do not matter greatly.
	Materials	●	16-19, 44	
	Energy	●	16-19, 39, 40	
	Water	●	16-19, 45	
	Biodiversity	●	34	
	Emissions, effluents and waste	●	16-19, 44, 46, 47	
	Products and services	●	16-19, 24-28	
	Compliance	●	16-19, 29	
	Transport	●	19	
	Overall	●	19	
	Labor Practices and Decent Work (LA)	Aspects		
Employment		●	50	
Labor/management relations		●	56	
Occupational health and safety		●	55	
Training and education		●	51-53	
Diversity and equal opportunity		●	50	
Equal remuneration for women and men		●	54	
Human Rights (HR)	Aspects			
	Investment and procurement practices	●	20	
	Non-discrimination	●	20	
	Freedom of association and collective bargaining	●	20	
	Child labor	●	20	
	Prevention of forced and compulsory labor	●	20	
	Security practices	●	20	
	Indigenous rights	●	20	
	Assessment	●	20	
	Remediation	●	20	
Society (SO)	Aspects			
	Local communities	●	20, 33, 45-47, 55, 60	
	Corruption	●	20, 21	
	Public policy	●	21, 25, 58	
	Anti-competitive behavior	●	21	
Product Responsibility (PR)	Aspects			
	Customer health and safety	●	30-33	
	Product and service labelling	●	35	
	Marketing communications	●	SK Chemicals conforms to all domestic laws on marketing, with advices from the Legal Affairs Team.	
	Customer privacy	●	Given the nature of its businesses, SK Chemicals does not collect personal information of customers.	
	Compliance	●	33, 34	

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● Reported fully | ● Reported partially | ● Not reported

	Performance Indicator	Report Status	Pages	Remarks	
Economic (EC)	<b>Economic performance</b>				
	EC1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.	●	10	
	EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change.	●	24-28, 39, 40	
	EC3	Coverage of the organization's defined benefit plan obligations.	●	10	
	EC4	Significant financial assistance received from government.	●	10	
	<b>Market presence</b>				
	EC5	Range of ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation.	●	New employees receive the same wages regardless of their sex.	
	EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation.	●	For domestic operations, the entire territory of South Korea is regarded as forming one region of operation. There is no preference given to making local purchases or hiring locals.	EC6 This report does not include SK Chemicals' overseas plants or offices. Once they become included in the scope of future sustainability reports, their activities and impact will be described in detail.
	EC7	Procedures for local hiring and proportion of senior management hired from the local community at significant locations of operation.	●		
	<b>Indirect economic impacts</b>				
	EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement.	●	60	
	EC9	Understanding and describing significant indirect economic impacts, including the extent of impacts.	●	N/A	
	<b>Materials</b>				
	Environmental (EN)	EN1	Materials used by weight or volume.	●	44
EN2		Percentage of materials used that are recycled input materials.	●	Given the nature of its business, SK Chemicals cannot use recycled material in production.	
<b>Energy</b>					
EN3		Direct energy consumption by primary energy source.	●	39	
EN4		Indirect energy consumption by primary source.	●	39	
EN5		Energy saved due to conservation and efficiency improvements.	●	41, 42	
EN6		Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives.	●	N/A	
EN7		Initiatives to reduce indirect energy consumption and reductions achieved.	●	41, 42	
<b>Water</b>					
EN8		Total water withdrawal by source.	●	45	
EN9		Water sources significantly affected by withdrawal of water.	●	45	
EN10		Percentage and total volume of water recycled and reused.	●	N/A	
<b>Biodiversity</b>					
EN11		Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.	●	N/A	EN11 Because the Korean plants are located in regions without high levels of biodiversity, indicators of biodiversity do not matter greatly.
EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.	●	34		
EN13	Habitats protected or restored.	●	N/A		
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity.	●	N/A		
EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.	●	N/A		
<b>Emissions, effluents and waste</b>					
EN16	Total direct and indirect greenhouse gas emissions by weight.	●	39		
EN17	Other relevant indirect greenhouse gas emissions by weight.	●	N/A	EN17 This indicator does not bear much significance, as the amount of greenhouse gas emissions generated by SK Chemicals' plants in Korea is too little to reach the requirement of EN16.	
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved.	●	40		
EN19	Emissions of ozone-depleting substances by weight.	●	47		
EN20	NOx, SOx, and other significant air emissions by type and weight.	●	47		
EN21	Total water discharge by quality and destination.	●	45, 46		
EN22	Total weight of waste by type and disposal method.	●	44		
EN23	Total number and volume of significant spills.	●	There was no such case during the report period.		
EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.	●	N/A		
EN25	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.	●	45		

● Reported fully | ● Reported partially | ● Not reported

	Performance Indicator	Report Status	Pages	Remarks	
Labor Practices and Decent Work (LA)	<b>Products and services</b>				
	EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.	●	25-28	
	EN27	Percentage of products sold and their packaging materials that are reclaimed by category.	●	Of all the materials produced, everything except carbon fiber can be reused or recycled. Pharmaceuticals, however, cannot be reused or recycled.	
	<b>Compliance</b>				
	EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.	●	No such fines/sanctions were imposed during the report period.	
	<b>Transport</b>				
	EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.	●	N/A	
	<b>Overall</b>				
	EN30	Total environmental protection expenditures and investments by type.	●	N/A	
	<b>Employment</b>				
	LA1	Total workforce by employment type, employment contract, and region, broken down by gender.	●	50	
	LA2	Total number and rate of new employee hires and employee turnover by age group, gender, and region.	●	50	
	LA3	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations.	●	N/A	
	LA15	Return to work and retention rates after parental leave, by gender.	●	57	
<b>Labor/management relations</b>					
LA4	Percentage of employees covered by collective bargaining agreements.	●	56		
LA5	Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements.	●	50		
<b>Occupational health and safety</b>					
LA6	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs.	●	55		
LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region and by gender.	●	55		
LA8	Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases.	●	55, 57		
LA9	Health and safety topics covered in formal agreements with trade unions.	●	N/A		
<b>Training and education</b>					
LA10	Average hours of training per year per employee by gender, and by employee category.	●	52		
LA11	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.	●	52, 53		
LA12	Percentage of employees receiving regular performance and career development reviews, by gender.	●	54		
<b>Diversity and equal opportunity</b>					
LA13	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.	●	50		
<b>Equal remuneration for women and men</b>					
LA14	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation.	●	20		
Human Rights (HR)	<b>Investment and procurement practices</b>				
	HR1	Percentage and total number of significant investment agreements and contracts that include clauses incorporating human rights concerns, or that have undergone human rights screening.	●	20	
	HR2	Percentage of significant suppliers, contractors and other business partners that have undergone human rights screening, and actions taken.	●	20	
	HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.	●	20.	
	<b>Non-discrimination</b>				
	HR4	Total number of incidents of discrimination and corrective actions taken.	●	There was no such case reported during the report period.	
	<b>Freedom of association and collective bargaining</b>				
	HR5	Operations and significant suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and actions taken to support these rights.	●	20	
<b>Child labor</b>					
HR6	Operations and significant suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor.	●	20		

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● Reported fully | ● Reported partially | ● Not reported

	Performance Indicator	Report Status	Pages	Remarks
	<b>Forced and compulsory labor</b>			
	<b>HR7</b> Operations and significant suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor.	●	20	
	<b>Security practices</b>			
	<b>HR8</b> Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations.	●	N/A	
	<b>Indigenous rights</b>			
	<b>HR9</b> Total number of incidents of violations involving rights of indigenous people and actions taken.	●	N/A	
	<b>Assessment</b>			
	<b>HR10</b> Percentage and total number of operations that have been subject to human rights reviews and/or impact assessments.	●	20	
	<b>HR11 Remediation</b>			
	"Number of grievances related to human rights filed, addressed and resolved through formal grievance mechanisms."	●	20	
Society (SO)	<b>Local communities</b>			
	<b>S01</b> Percentage of operations with implemented local community engagement, impact assessments, and development programs.	●	33, 55, 60	
	<b>S09</b> Operations with significant potential or actual negative impacts on local communities.	●	33, 45-47, 55	
	<b>S010</b> Prevention and mitigation measures implemented in operations with significant potential or actual negative impacts on local communities.	●	33, 45-47, 55	
	<b>Corruption</b>			
	<b>S02</b> Percentage and total number of business units analyzed for risks related to corruption.	●	20	
	<b>S03</b> Percentage of employees trained in organization's anti-corruption policies and procedures.	●	21	
	<b>S04</b> Actions taken in response to incidents of corruption.	●	21	
	<b>Public policy</b>			
	<b>S05</b> Public policy positions and participation in public policy development and lobbying.	●	21, 25, 58	
<b>S06</b> Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country.	●	No such financial or in-kind contribution was made during the report period.		
	<b>Anti-competitive behavior</b>			
	<b>S07</b> Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes.	●	21	
	<b>Compliance</b>			
	<b>S08</b> Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations.	●	21	
Product Responsibility (PR)	<b>Customer health and safety</b>			
	<b>PR1</b> Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures.	●	33	
	<b>PR2</b> Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services during their life cycle, by type of outcomes.	●	No such violations occurred during the report period.	
	<b>Product and service labelling</b>			
	<b>PR3</b> Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements.	●	All pharmaceutical products and equipment provide relevant information, pursuant to the laws in Korea.	
	<b>PR4</b> Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes.	●	No such violations occurred during the report period.	
	<b>PR5</b> Practices related to customer satisfaction, including results of surveys measuring customer satisfaction.	●	35	
	<b>Marketing communications</b>			
	<b>PR6</b> Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship.	●	No such program exists as of yet.	
<b>PR7</b> Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship by type of outcomes.	●	N/A		
	<b>Customer privacy</b>			
<b>PR8</b> Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.	●	Given the nature of its businesses, SK Chemicals does not collect any private information of customers.		
	<b>Compliance</b>			
<b>PR9</b> Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services.	●	No such violations occurred during the report period.		

This report has been produced in accordance with G3.1, an international guideline and standard on sustainability reports. Verification by an independent third party gave this report a grade of A+ for its conformity to the guideline.

## ISO 26000

The following table has been created in order to help you better understand and conceptualize how the seven core subjects of the ISO 26000 (i.e. governance, human rights, labor practices, environment, fair operating practices, consumer issues, and community involvement and development) are related to the content of this report.

Core Subjects	Issues	Pages	Core Subjects	Issues	Pages
Governance	Decision-making processes and structures	11, 15, 18, 20	Fair operating practices	Anti-corruption	20, 21
	Human rights	Due diligence		20, 33	Responsible political involvement
Human rights risk situations		20		Fair competition	21
Avoidance of complicity		20		Promoting social responsibility in the value chain	20
Labor practices	Resolving grievances	20	Consumer issues	Respect for property rights	32
	Discrimination and vulnerable groups	20, 50, 60		Fair marketing, factual and unbiased information and fair contractual practices	68
	Civil and political rights	20		Protecting consumers' health and safety	32, 33
	Economic, social and cultural rights	20, 57		Sustainable consumption	24-28
	Fundamental principles and rights at work	20, 51-57	Consumer service, support, and complaint and dispute resolution	35	
	The environment	Employment and employment relationships	20, 50	Community involvement and development	Consumer data protection and privacy
Conditions of work and social protection		20, 51-54, 57	Access to essential services		60
Social dialogue		20, 56	Education and awareness		-
Health and safety at work		20, 55	Community involvement		60
The environment	Human development and training in the workplace	51-53	Education and culture	60	
	Prevention of pollution	16-19, 34, 44-47	Employment creation and skills development	50, 59	
	Sustainable resource use	16-19, 38-45	Technology development and access	60	
	Climate change mitigation and adaptation	16-19, 38-43	Wealth and income creation	10	
The environment	Protection of the environment, biodiversity and restoration of natural habitats	16-19, 34	Health	60	
			Social investment	60	

## UN Global Compact

SK Chemicals endorses the 10 principles of the UN Global Compact on human rights, labor, environment, and anti-corruption. This report also provides information on the efforts and practices of SK Chemicals that seek to pursue and embody these 10 principles.

### The Ten Principles of the UN Global Compact

Category	Principles	Pages
Human Rights	1. Businesses should support and respect the protection of internationally proclaimed human rights; and	20
	2. Make sure that they are not complicit in human rights abuses.	20
Labour	3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;	20, 56
	4. The elimination of all forms of forced and compulsory labor;	20
	5. the effective abolition of child labor; and	20
	6. The elimination of discrimination in respect of employment and occupation.	20, 50, 54
Environment	7. Businesses should support a precautionary approach to environmental challenges;	16-19, 34, 38-47
	8. undertake initiatives to promote greater environmental responsibility; and	19, 34
	9. Encourage the development and diffusion of environmentally friendly technologies.	16, 17, 19, 24-28
Anti-Corruption	10. Businesses should work against corruption in all its forms, including extortion and bribery.	20, 21

# Third Party's Assurance Report

| To the Readers of SK Chemicals 2011 Sustainability Report |

## Foreword

Korea Management Association Registration inc(KMAR) has been requested by SK Chemicals to verify the contents of its 2011 Sustainability Report (the Report). SK Chemicals is responsible for the collection and presentation of information included in the Report. Our responsibility is to carry out assurance activities on specific information in the assurance scope stipulated below.

## Our independence

With the exception of providing third party assurance services, KMAR is not involved in any other SK Chemicals business operations that are aimed at making profit in order to avoid any conflicts of interest and to maintain independence.

## Assurance scope

SK Chemicals describes its efforts and achievements of the sustainability activities in the Report. The assurance process is designed to provide readers with the following information:

- **Assurance of the economic section:**

Reviews whether the financial performance data has been extracted appropriately from SK Chemicals' 2009 individual financial statements, audit reports, and public notification data for the separate 2010 and 2011 financial statements as defined in the Report's performances and conclusion sectors

- **Assurance of the environmental and social section:**

Reviews whether the environmental and social information included in the Report is presented appropriately.

"Appropriately presented" means that the actual data and original information are appropriately reflected in the Report with consistency and reliability. For the economic section, we based our evidence-gathering procedures on reasonable assurance. It is a higher level of assurance than that of the limited assurance in terms of characteristics and the extent of performed tasks.

## Assurance standards

KMAR performed the review based on our own assurance methodology. We also used the International Auditing and Assurance Standards Board-issued "International Standard on Assurance Engagements (ISAE 3000): Assurance Engagements other than Audits or Reviews of Historical Financial Information" as additional guidelines.

## Assurance process

In order to form our conclusion, KMAR followed the steps outlined below to assess SK Chemicals' internal processes for reviewing the sustainability-reporting practices.

- Reviewed systems and processes used in producing data
- Assessed internal documents and materials
- Interviewed people in charge of disclosed activities and performances

## Conclusion

Based on the results we have obtained from material reviews, relevant department visits, and interviews, we had several discussions with SK Chemicals on the revision of the Report. We reviewed the Report's final version in order to confirm that our recommendations for improvement and our revisions have been reflected. When reviewing the results of the assurance, the assurance team did not find any inappropriate contents related to the compliance with the principle in the Report.

- **Inclusivity**

Inclusivity is the participation of stakeholders in developing and achieving an accountable and strategic response to sustainability.

-SK Chemicals is developing and maintaining stakeholder communication channels in various forms and levels in order to make a commitment to be responsible for the stakeholders. The assurance team did not find any critical stakeholder group left out during this procedure.

- **Materiality**

Materiality is determining the relevance and significance of an issue to an organization and its stakeholders. A material issue is an issue that will influence the decisions, actions, and performance of an organization or its stakeholders.

-SK Chemicals is determining the materiality of issues found out through stakeholder communication channels through its own materiality evaluation process, and the assurance team did not find any critical issues left out in this process.

- **Responsiveness**

Responsiveness is an organization's response to stakeholder issues that affect its sustainability performance and is realized through decisions, actions, and performance, as well as communication with stakeholders.

-The assurance team did not find any evidence that SK Chemicals' counter measures to critical stakeholder issues were inappropriately recorded in the Report.

The assurance result of the reliability of sustainability performance information is as follows:

- **Economic performance**

We compared the Report with SK Chemicals' 2009, 2010 and 2011 Financial Statements and found that the financial data presented in the Report has been appropriately derived from 2009, 2010 and 2011 Financial Statements.

- **Environmental and social performance**

We observed that the information found in the environmental and social sections has been appropriately presented. We did not discover any significant errors.

We hope SK Chemicals' publication of the Report is actively used as a communication tool with stakeholders and recommend the following for improvements.

- Efforts should be made to develop the publication process of the sustainability report into more systematic process. This may include improvement of internal communications on sustainability achievements, development of performance indicators, and procedure documentation.
- Efforts should be made to promote the understanding of issues on sustainability. Although SK Chemicals is currently doing its best to enhance sustainability achievements in many ways, more effort should be made to promote the understanding of the relationship between key project activities and sustainability as well as to have shared awareness between executives and staff members.
- The establishment of an organization dedicated to sustainability management in January 2011 is very encouraging news. The organization should establish a system to develop and execute strategies, review its achievements, and examine various social expectations through participation activities of stakeholders from each field and reflect them in their decision-making process. In addition, since Green Chemicals and Life Science Biz. are different in the sustainability aspect, efforts should be made to effectively coordinate the establishment and execution of appropriate strategies according to their characteristics.

## Recommendation for improvement

May 18, 2012



*K. H. Park*