

● The KRCC 2004 2nd Board of Directors Meeting

KRCC Board of Directors Meeting was held at Westin Chosun(Violet Room) at 11:00 a.m. on May 11, 2004. Second for the year, the meeting was attended by 21 board members and executives, including Chairman Won-joon Hur. Board reviewed the plan for the operation of Chemical Emergency Information Center, in connection with which board discussed the possibility of joining in. CEIC is primarily responsible for around-the-clock service of taking emergency calls, and in an emergency situation provides information on necessary response information and also safety information about chemical substance needed for safe use of chemical products. In assistance to industry's jointed effort to establish an emergency information center, the Board decided to take part in and share the cost of the operation of the Chemical Emergency Information Center at Inje university that has been operated as a pilot project.

● KRCC committee reshuffle

KRCC reorganized committees to gear up to the need for a more effective project implementation. Two new subcommittees, Product Stewardship and Distribution were formed to be put under the implementation committee, while Emergency Response subcommittee was renamed Community Awareness and Emergency Response subcommittee. This subcommittee will be charged with new responsibilities in addition to the existing ones. Positions for publicity, technology, logistics safety, and other specific areas were also created. These new personnel, alongside with the existing Safety/Environment team and RC coordinators, are expected to provide more practical expertise supports to the KRCC member companies.

● Responsible Care Weekly service and KRCC Webzine

Beginning June 1, 2004, KRCC began publishing the "Responsible Care Weekly". An e-mailing service delivered every Tuesday, this is a sum-up of the weekly news and information that are being provided through KRCC homepage(www.krcc.or.kr) on related issues, legislations, and KRCC activities. Users can click on the subject news and information and be linked to the KRCC homepage for further detail news and information. The quarterly newsletter is distributed in the form of KRCC webzine via PDF file delivery to boost the number and speed of access. (You can apply for the subscription of RC Weekly at krcc@krcc.or.kr)

● KRCC Public Activities Committee

KRCC Public Activities committee(Chairman: Chang-soo Lee, Director of Rohm and Haas Korea) was held on July 2, 2004. The committee reviewed publication of RC annual report, yearly plan for newsletter publication, outreach activity, and other issues. It was decided to form a preparation committee for the publication of the annual report, and to develop more outreach programs that would help youngsters understand chemistry and chemical industry better.

● Environment, Health and Safety Academy for SMEs

Sponsored by Dow Chemical Korea, Korea Responsible Care Council is offering "Environment, Health and Safety academy for small/medium companies" in partnership with Korea Chemicals Management Association. This program provides employees of small/medium chemical companies across the country information and knowledge on how to effectively respond to emergency, while aiming to redress industrial image and raise awareness about the significance of RC management.

Following the 1st session that was held on May 25 in Busan(Hotel Lotte), the second was offered on June 25 in Seoul(Kyoyuk MunHwa HoeKwan). In his welcoming speech to those present at the Seoul academy, KRCC Chairman Won-joon Hur said, "Responsible Care comes with the moral conscience and conviction that one should act what is right, and therefore it can grow to be a firmly grounded corporate culture with the strong commitment of the employees", and expressed a keen interest in seeing small/medium companies more actively involved in Responsible Care.

In 2003, over 10 sessions, the academy introduced the usefulness of RC as a business practice, companies that adopted RC in their management activity, along with several actual performances at work sites. This year, in addition to information on the current movement, topic presentations were made on each of the management codes related to safety design, safety measure in emergency situation, reduction of pollutants and waste, and open discussion on RC as a management strategy.

In this program, KRCC reported on the changing industrial environment and the benefit of self-motivated RC activity, to be followed by introduction by RC code leaders on each of the RC codes for environment, health, and safety. Process Safety code, which is about safety design and operation improvement that involves prevention of fire, explosion, or leakage, was explained by Mr. Chun-seok Yoon of Samsung Atofina. Mr. Su-young Lee of SK took the part of Employee Health and Safety code, and discussed about protection and improvement of safety and health at work site. Mr. Hyung-sik Lee of Honam Petrochemical explained Emergency Response, which is about establishment of safety measure against emergency and a measure for minimizing human and property damages in the surrounding area. Mr. Dong-kyu Choi of Hyosung discussed Pollution Prevention code which is to protect the working environment by reducing the pollutants and waste that are discharged out into air, water, and soil. In a special consideration of the fact that some attendees are dealing in product distribution, Mr. Wee-hyung Kim of Dow Chemical Korea shared his experiences and practices on Distribution, a code yet to be added to the existing RC codes.

In the panel discussion that followed, Chairman of implementation committee Mr. Moo-young Hwang presided and the code leaders who presented the lectures attended as panelists. Mr. Hwang's view, "Large or small, to chemical companies, safety and winning over public trust count" was well received, and attendees were concerned about publicity to community and its strategy, and ways to be involved in RC activity. Over time the academy has turned out to be an excellent opportunity for the participating small/medium companies to exchange and learn one another about specific or technical information on Environment, Health and Safety.

〈Schedule of EH&S Academy for SMEs〉

	Date	No of participants	Place	Region
1st	May. 25, 2004	100	Busan(Hotel Lotte)	Busan/Kyongnam
2nd	June. 25, 2004	100	Seoul(Kyoyuk MunHwa HoeKwan)	Seoul/Inchon/Kyonggi
3rd	Sept. 10, 2004	100	Daegu	Daegu/Kyongbuk
4th	Oct. 8, 2004	100	Daejon	Daejon/Chungchong
5th	Nov. 12, 2004	100	Kwangju	Kwangju/Honam



Getting Ready for the Future, LG Chem's Outreach Program

Chemistry is a principle of our every day life, and one of very important basic sciences indispensable in making various products we need for our living. Chemical fertilizer, synthetic fibers, and different plastic construction materials have enhanced the living, eating, and housing of human being. Chemical industry supplies high-tech industries like electronics and information/communications with core product parts and components. However, chemical industry is wrongly criticized as a leading cause of the environmental problems. Furthermore we are facing a diminishing interest of youngsters in pursuing chemistry as their choice for future career, apparently influenced by the loathing of engineering study that is recently posed as a serious social issue, a change very undesirable for our own future.

In recognition of the need to improve public image and win back public trust, LG Chem is actively involved in 'Responsible Care', and has plans to dedicate ourselves in the social contribution activities worthy of our standing as a socially responsible leading Korean chemical company. We have developed Outreach Program as an activity of social contribution, which we believe will help the youth get motivated in learning about chemistry, will be useful in the improvement of public perception about chemical industry and also in introducing our company to talented people as their future employment opportunity.

We formed 'Outreach Program task force' of our employees with relevant expertise and experience in September 2003. They benchmarked world leading companies, which they used in the development our own program that suits the local requirement. On May 27 this year, 'Mobile Chemistry Lab' was launched to allow us to get on the right track. Special vehicle complete with necessary experiment equipment visits youngsters for lectures and activities. Another activity of our Outreach Program, 'Chemistry Camp' offers young students to enjoy group activity and learn chemistry as part of our living.

● Mobile Chemistry Lab

We have special vehicle with trailer complete with the experiment equipment which drives us to the children whose living condition is not so favorable as to accommodate experiences related to science or chemical experiment. We perform chemical show and experiment in front of and with them and have fun time. This program enables children to learn and experience about chemistry in such a lively and fun fashion, and we trust exposure to this first-hand learning experience will draw children closer to the subject of chemistry and science in general.



Programmed and executed in partnership with Hanyang university as part of industry/academy cooperative effort, Mobile Chemistry Lab is provided on a weekly basis beginning June, now for the neighboring elementary school students of our plants, with a plan to reach further out to other elementary schools and social welfare facilities.

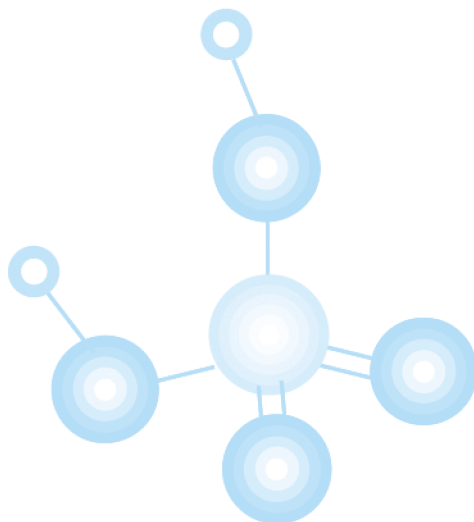
● Chemistry Camp

This provides middle school students with a learning experience about chemistry and group activity with added fun and memory making opportunity. A 3-day 2-night camping trip during summer vacation, Chemistry Camp is programmed with finding chemistry in our living, chemical experiment, character building, mind/body training, and other various peer group activities.

This year, under the slogan of 'Fun Chemistry! LG Chem's Summer Camp', this program will take off in Seoul, Yeosu, Cheongju, Ulsan where our plants are located. Beginning next year, we plan to expand this program across the nation.

"Preparing for the Future"

We trust our Outreach Program will help us change public perception about chemical industry, and it will grow to be a valuable activity that contributes to inspiring understanding of young people about the significance of chemical industry and scientific technology. By fully utilizing our resources, human and technological, we believe we will be able to turn young people's attention toward chemistry and science/engineering as well, and lay the foundation for us to secure talented human resources who will be leading our future science and industry.





Responsible Care and integrated system of managing SHE&Q

Integration of safety, health, environment and quality management system was regarded instrumental to corporate management when it was presented at the OECD workshop that was held in Seoul in 2001. Propped up by such positive reception, working group for chemical accident of OECD environment committee met in Paris in November of 2003 and adopted SHE&Q integration model development as a new project. Korea Occupational Safety & Health Agency(KOSHA) was appointed by OECD to supervise this project, and has currently been working on the development of the purported integrated system with completion scheduled for 2007.

Globally, SHE&Q integration is now posed as a new future management tool that goes well beyond SHE integration. In Korea, however, only a small number of companies who recognize the need and benefit of SHE integration are putting this system into practice, while majority of the companies have yet to reach that level of recognition and action.

This report discusses the need, concept, cases of SHE integration, RC's role and effect in facilitating SHE integration system in the management of chemical industry, and briefly on the RC's relevance to SHE&Q integration.

The need for SHE integration

SHE integration can be understood as an integration of ISO 14001 environment management and OHSAS 18001(or KOSHA 18001/KGS 18001) safety/health management, and SHE&Q is addition of ISO 9001 to SHE.

Process safety management system such as PSM(process safety management) and SMS(gas safety management system) that are in use in compliance with the domestic legislation should be put into SHE integrated system.

SHE integrated system generates following two advantages:





First, prevention of competitive disadvantage linked to the reduced efficiency in resources utilization that is caused from separately controlling safety, health, and environment. In keeping up with the various requirements of PSM/SMS, ISO 14001, OHSAS 18001, and relevant management tools, without fair consideration into possible correlations and contradiction of these ideas, management has become unnecessarily complex and inefficient in human resources and monetary investment as well.

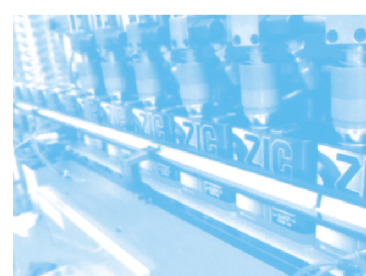
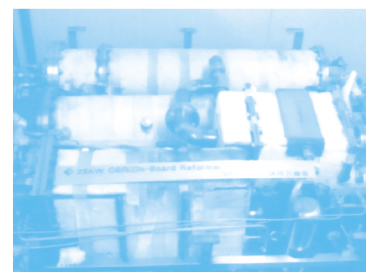
Second, contribution of SHE to raising awareness of interested people about SHE and to living up to industry's social responsibility imposed by the society. Recent SHE or Sustainability reports that companies are releasing to interested people points to the need for a comprehensive consideration of safety, health, and environment, and also to the scope of the damages of a major explosion that inevitably harms not just workers but air/water, in other words endangering safety, health, and environment all at the same time.

Concept of SHE integration system

At Safe Korea symposium which was held in June 2004 by KOSHA and EU Chamber of Commerce, KOSHA reported on the status of the development of SHE&Q integrated model, which has been in process under OECD commission, and the picture is a brief summary of the direction of the development project.

Similar management systems such as ISO 9001, 14001, OHSAS 18001 make SHE&Q individual systems. Essential to SHE&Q integration, SHE&Q integrated model is centered around PDCA cycle existing in these individual system to the effect of continual improvement. The picture shows the presence of SHE&Q core elements in each of P, D, C, A phases.

Review of SHE&Q model development has just started and is expected to make progress with time. SHE integrated system should be comparable to the composition illustrated ahead in the picture, only with the exception of the Q factor.



Case of SHE integrated system

Survey of oil and petrochemical companies to find out about the status of SHE or SHE&Q integration reports a substantial number of them are adopting these systems.

In Korea, LG-Caltex oil, Samsung Atofina, Honam petrochemical, Cheil Industries, SK have internal regulations and guidelines that match their specific business features while in agreement with the industrial standards set by ISO 9001, 14001, OHSAS 18001, and the like. These companies have integrated SHE guidelines accordingly.

Looking closely into instances of the world advanced companies, ExxonMobil integrated SHE into OIMS(Operation Integrity Management System) that consists of 11 elements, BP, similarly, has SHE integration that is made of 13 core elements, and Bayer also uses SHE integrated system of their own creation that is made of 16 elements named BAIT(Bayer Assessment and Improvement Tool).

〈표 1〉 해외 주요기업의 SHE 통합시스템의 Element 비교

〈Table 1〉 Elements of SHE integration system developed by world's leading companies

Exxon Mobil	BP	Bayer
Management & Leadership	Leadership & accountability	Leadership, commitment & accountability
Risk assessment & management	Risk assessment & management	Training
Personnel & training	People training & behaviors	Process safety & management of change
Third party services	Working with contractors and others	Environment management
Facility design & construction	Facility design & construction	Organizational culture & behavior management
Operation & maintenance	Operation & maintenance	Product stewardship
Management of change	Management of change	Task & operating procedures
Information and documentation	Information and documentation	Information and documentation
	Customers and products	Retirement & placement
Community awareness & emergency	Community & stakeholder awareness	Occupational health
	Crisis & emergency management	Inspection, maintenance & work permits
Incidents analysis & prevention	Incidents analysis & prevention	Procurement & services
Operation integrity assessment & improvement	Assessment, assurance & improvement	Incidents investigation F/U & prevention
		Emergency preparedness
		Communications
		Security

As shown in table 1 which compares major components of SHE integrated systems used by the advanced companies, similar areas are being commonly perceived as critical, and the main difference lies in the choice of words.

And many other multinational companies have also developed and in place either SHE or SHE&Q integrated system.

RC's role in SHE integration and suggestion

RC management practices that are currently in use in Korea are about 4 areas – process safety; employee health and safety; emergency response; and pollution prevention – and is regarded to meet the requirements of SHE integrated system. For the companies with SHE system already in place, RC management codes, not as a new system that replaces the existing SHE system, can come about as an ending result of their faithful performance in accordance with the existing SHE system. For companies who are going to adopt SHE management system, or who want to improve the existing SHE management system, use of RC management codes will accomplish the objectives.

The current RC management codes, with perceptible shortfalls, are not completely compatible to SHE integrated system. In view of this, future direction in the development of RC is proposed as follows.



First, codes for distribution, community awareness, and product stewardship will achieve thoroughness of SHE integrated system.

Second, flexibility in the operation of self-assessment process is required. The recent trend in the world leading companies indicates management of combined SHE core elements. For instance, management leadership is based not on the separate supervision but on the job performance that encompasses a combination of the elements of safety, health, and environment.

There exist some overlaps in the current RC management codes, in areas like management leadership, education/training, etc. In order to do away with such redundancy, even with the existing RC management codes, self-assessment criteria should reflect PDCA cycle of SHE management system and individual companies' standing.

RC for SHE integration

There are benefits in sustaining the improvement of RC management codes and practices that are conducted to allow RC to be instrumental to SHE integration.

RC has basic guidelines and management codes on safety, health, and environment. It is put into practice by the practicing companies to accommodate for the individual conditions, in reference to the criteria that they have arranged to ensure continual improvement, including such elements as implementation, resource management, and time table for periodic assessment.

This is supposed to be a system that fully satisfies the global SHE system requirements like ISO, while also in compliance with the domestic legislation like PSM/SMS.

A thorough understanding and utilization of RC and its benefits should produce the same result as would be obtained through installation of SHE integrated system – organizational improvement, effective human resources management, streamlined paper work, cost reduction, disaster-free operation, and restoration of public reputation.

SHE&Q integrated system and RC

SHE&Q system is comparable to RC with the addition of quality control. Not for the purpose of giving totality or of regulatory consolidation, SHE&Q should be pursued in a way that does not compromise the significance of SHE to the extent of minimizing redundancy and maximizing resource utilization.

RC management codes, as part of SHE&Q, would have to be continuously developed and improved in the process of SHE&Q model development, which can be achieved only through active participation of the industry.



Responsible Care Verification System

Verification of Responsible Care activities has become an issue since American Chemistry Council recently introduced a certification system using RC14001.

According to the International Council of Chemical Associations' definition, 'verification' means "Systematic procedures to verify the implementation of the measurable (or practical) elements of Responsible Care by the member companies".

Methods of Responsible Care verification include member company's self-assessment, verification conducted by other member company, and third-party verification done by authorized certifier. 'Third party verification' conducted by independent outside authority raises the most controversy.

The controversy mainly concerns whether getting third-party verification will increase Responsible Care activity and its transparency, and ultimately conducive to improving public image, or industry's ethic, self-motivation, mutual effort and support, and other such critical values that are expected of Responsible Care will be compromised once RC turns out to be no more than a system for obtaining certification.

Presently KRCC is making arrangements for the adoption of the third-party audit system. Following is KRCC study of RC verification system used by world's major RCLG(Responsible Care Leadership Group) member countries based on information obtained from CAREline (issue 31-34) and email questionnaires.

◆ ABIQUIM of Brazil

The Brazilian Chemical Industry Association(ABIQUIM) is using a procedure called 'VerificAR'. Verifiers are composed of ISO examiners, experts at other member companies, and community representatives. Beginning January 2003 one-day seminars are held in major cities to provide courses for obtaining auditor qualification.

Verification consists of 4 protocols-site; corporate offices; interest parties; and ABIQUIM. Site/corporate office protocol is conducted by examining RC management system that is adopted by the company to ensure RC implementation. Interest party protocol is making questions regarding customer, supplier, contractor, distributor, emergency response authorities, worker, and people in the community. ABIQUIM protocol examines whether company/site live up to RC commitment that they made for the year.

Scoring is made through panel discussion and interview of employees/interest parties. Once verification is complete, company is given the final score, report, and completion certificate. Report describes positive performance as evidenced by verification process and desired improvements.



◆ ASIQUIM of Chile

Chilean association ASIQUIM introduced third-party verification system in 2001 in connection with RC award. High ranking award candidates, who are chosen by the board of judges in accordance with the RC award criteria, are put to verification by third-party. In 2002 five companies signed up for the contest and four got through the verification. Auditor, NGO, chemical expert, and community representative were on the 4-people team of verifiers. Verifiers inspect plant site, and interview manager, employees, neighbors, and interest people, based on which produce report, and discuss with relevant companies on the result of verification, and about whether additional verification is required or not.

◆ ACC of United States

The American Chemistry Council(ACC) adopted RCMS(Responsible Care Management System) in 2002 as a basic requirement for RC implementation, and recently introduced a new management system called RC14001 in addition. RCMS and RC14001 both dictate third-party verification. Companies can obtain ISO14001, EMS, and RC certification via RC14001.

Verification by ACC is conducted in partnership with two outside organizations—RAB(Registrar Accreditation Board) and BEAC(Board of Environment, Health and Safety Auditor Certifications). These two organizations provide training for teaching verifiers to observe ACC's requirements and to understand thoroughly about RC. ACC member companies are subject to third-party verification every three years.

◆ NZCIC of New Zealand

The New Zealand Chemical Industry Council(NZCIC) published a six-volume RCMS(Responsible Care Management System) in 1996, and administers PRINCE(Premises Inspection and Certification) Accreditation whereby companies are evaluated and certified. PRINCE provisions are closely equivalent to those in RC, related domestic laws and regulations, ISO9000, ISO14001 category. Validity of verification differs depending on the types of business—1 year for chemical plant; 18–24 months for transportation; and 3 years for retailing.

◆ PACIA of Australia

The Plastics and Chemicals Industries Association(PACIA) of Australia has conducted self-assessment and random auditing by outside body before 2000, and is currently getting ready to adopt third-party verification system. Based on self-assessment result, member companies present RC performance report, 10% of the member companies are randomly selected for external verification, and interest people are called on to join in the entire process of the external auditing and certification on RC performance.



In an effort to put the verification system on the firm track, talks are going on with the concerned regulatory authorities to award the companies who passed the certification and auditing with favorable treatments.

◆ CIA of United Kingdom

The Chemical Industries Association(CIA) adopted RCMS(Responsible Care Management System) in 1998 to allow all the member companies to self-assess their RC performance. RCMS fully covers ISO14001, EMAS, ILO-OHS2001, LHSAS18001, other relevant domestic standard, and Product stewardship, Distribution, Emergency response as well.

Third-party verification can be obtained from CIA authorized BSL, Lloyds, SGS Yarsley, DNV, CCS examiners. CIA RCMS certifiers are supposed to have qualification for ISO14001 or EMAS auditing.

◆ JRCC of Japan

The Japan Responsible Care Council(JRCC) introduced third-party verification system in April of 2002. Conducted by Verification Center, third-party verification is not mandatory, and 20 member companies took this qualifying system so far. JRCC concentrates on the qualification and training of verifiers, most of whom are RC experts of member companies.

To give anonymity to the verification process, people from academic circle, labor, consumer, product user are on Verification Advisory Committee, and monitor the verification process and advise ways for improvement.

◆ CAIA of South Africa

The Chemical and Allied Industries Association(CAIA) developed third-party audit protocol on the 7 RC management codes. Based on the findings from self-assessment results, this protocol is tied to the provisions of NOSA, the domestically developed system of auditing environment, safety, and health, and is getting ready for a start-up within the coming 2 years.

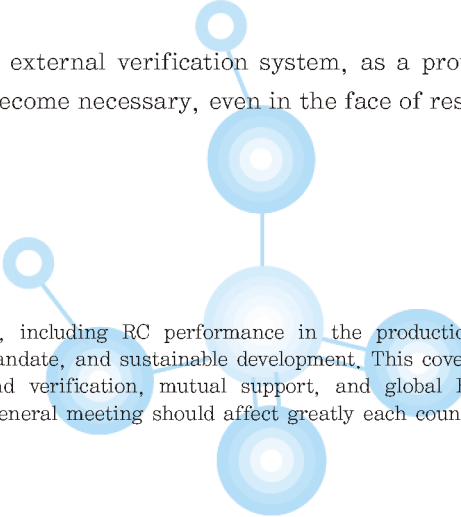
Once verification is done, wherein a team of auditors inspect compliance with ISO14000, OHSAS18000, NOSA system, and RC, they produce an audit report and successful companies are awarded with certificate, which is equivalent to the validation for different verifications and certifications.

Thailand is drawing up the guidelines for third-party verification, with a plan to continue to encourage member companies to adopt this system by their own choice. In Spain, RC experts who were appointed by the association – mostly well-versed RC representatives – conduct 'second-party verification'. According to a report issued in October 2003, only 3 out of 22 European countries are currently taking third-party verification or certification system.



Not many countries are adopting third-party verification system. However, 'Responsible Care Charter*' that was produced last year based on the consensus among the interest parties of each country urges RC organizations and companies to develop external verification program. Furthermore, RCLG(Responsible Care Leadership Group) chairman José Maria Bach, at the 2003 Thailand meeting, emphasized the need, saying, "It is a question of when".

In view of the current trend, it is very likely that external verification system, as a provision for transparency and trustfulness of RC activity, will become necessary, even in the face of reservations and concerns.



*Note : ICCA is working on new tasks, including RC performance in the production process, product use and transparency mandate, and sustainable development. This covers methods of performance improvement and verification, mutual support, and global RC control. Decisions to be made by RCLG general meeting should affect greatly each country's future RC activity.



■ Hanwha Chemical received National Environment friendly management award (June 3, 2004)

Hanwha Chemical(President:Mr. Won-joon Hur) won grand prize(Prime Minister Prize) at the 2004 national environment friendly management competition for its excellent environmental management system and cleaner production performance. Hanwha has since 1990 established Environment/Safety as a core management principle and put forward a rigorous set of environment/safety/health management standard which controls business operation across the company. Pollutant discharge has strictly been monitored and controlled to be kept below 30% at all times of the legal allowance, and investments and efforts have consistently been put in for the development of environment friendly products and technology.

■ PolyMirae invites employee families to plant (June 10, 2004)

PolyMirae(President: Mr. Jin-wook Cho) held Employee families plant tour. During this event, family members of the employees had a tour around the worksite, and listened about the working environment and the companys future plans. PolyMirae hopes that such experience will give their employees and their family members an excellent opportunity to raise their pride, and redress negative perception that is widespread among the general public. President Mr. Cho welcomed the visiting family members with his assuring words, we will keep up our efforts to make our plant a better, cleaner workplace so that you will be able to throw away the worry and live comfortably. Visitors mentioned that it was an opportunity for them to see with their own eyes that chemical plants are very environment friendly and bring benefits to the community and the economy as well, contrary to the common negative impression about chemical companies that they have so far held largely under the influence of news media. They wished the event of such kind would happen more often on a regular basis in the future.

■ Green Volunteers of Samsung Atofina set off(June 25, 2004)

Samsung Atofina(President: Hong-sik Ko) launched Green Volunteers on June 25. Headed by President Ko, Green Volunteers is a reorganization of the existing volunteer activities Sacred Torch volunteers which had been operated as a autonomous volunteering circle of employees and their family members, and has more than 3,000 of the entire employees, their family members, and retirees, subdivided into 40 some units. Systematically managed under 10 action assignments building house of love in rural area, walk for love, science class for dream trees, schooling support for the youth, ocean cleaning, and so on-these units will be involved in volunteer activities of sharing and respecting toward making warm world come true. Celebrating the commencement, President Ko stressed that social services activity is a significant element that leads out the virtuous circle of the management and the company is committed to fulfilling its social roles and to ultimately reinventing itself as a respectable company.