

## **CONTENTS**

Message	2
Profile of ZEON	3
Surprisingly ZEON	5
Interview with the President	7
Business and Strategy	11
Elastomer Materials Business	11
Specialty Materials Business	13
Other Business	16
Research and Development (R&D)	17
Production Management and Safety	19
Highlight 1	
Global expansion starting in Asia	21
Highlight 2	
Creating corporate culture via Torchlight (taimatsu) activities	23
Strengths Supporting our Businesses	25
Human Resource Development	25
Safety Initiatives	25
Environmental Initiatives	26
Quality Initiatives	26
Social Contribution Initiatives	27
CSR Implementation Plan	29
Corporate Governance	31
Risk Management	31
Data Highlights	33
Major Sales & Production Bases	35
Group Company Data	37
ZEON Group History	39



#### ZEON is contributing to the preservation of the Earth and the prosperity of the human race

In keeping with its name, which derives from the Greek words "geo" (the Earth) and "eon" (eternity), ZEON will contribute to the sustainable development of people, society and the global environment through innovative world-class technologies.



- We will ensure compliance and meet society's needs for safety and security
- We will contribute to sustainably developing society and protecting the global environment through our corporate activities
- We will ensure that each and every ZEON person is aware of CSR and acts accordingly

#### **Report Policy**

At ZEON Corporation and the ZEON Group, we used to publish the "CSR Report" so that all of our stakeholders can understand our approach to CSR and activities for the environment. However, from fiscal 2013, we have been issuing the "Corporate Report" in a magazine format, which includes an annual report that provides an overview of general ZEON business activities and corporate information functions.

The FY2014 report aims to visualize specific business activities through such new features as "Profile of ZEON", which provides a summary of ZEON business activities, and "Business and Strategy", in which managers explain the strategy for each division, and the strategy for research and development and production innovation. Highlights in the report include the reports on the development of business overseas, particularly in connection to Asia, and the report on the changing the culture through "Torchlight (taimatsu) activities."

We ask for your honest feedback and opinions so that they may be used to improve our activities in the future.

Period Covered

April 2013 to March 2014

(also includes some new information from April 2014 and later)

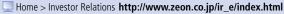
Organizations Covered

The report covers ZEON Corporation and Group companies in Japan and overseas. Some data only covers ZEON Corporation.

#### **Disclosure Through Each of the Various Tools**

The Corporate Report contains a wide range of information about management and CSR, while the CSR website contains detailed performance and site reports regarding CSR information. We also disclose more detailed management information on the IR website and in the Fact Book.







Printed brochure : CORPORATE REPORT 2014



Website : CSR Activities



Website : Investor Relations

#### Message

Since the establishment of ZEON Corporation in 1950, we have consistently utilized our original "do not imitate and cannot be imitated" technology and we have given the world countless new products.

Since fiscal 2011, while we have been working on the Enterprise Blueprint for 2020 published in the form of the Mid-Term Management Plan SZ-20, the environment around ZEON has become more difficult in terms of restricted energy usage following the Great East Japan Earthquake, massive fluctuations in exchange rates, worsening overseas market conditions, and more.

Despite this, in fiscal 2013, the final year of SZ-20, we achieved a record high of 19.7 billion yen in consolidated net profit for the current term. Also, in terms of new production sites, in Japan, we completed construction of the plant for diagonally stretched retardation film in Tsuruga City, and the S-SBR plant in Singapore and the synthetic rubber container plant in Vietnam have both started operating as planned.

From fiscal 2014, we are starting SZ-20 Phase  ${\mathbb I}$  of the new Mid-Term Management Plan as the next step towards the Enterprise Blueprint for 2020.

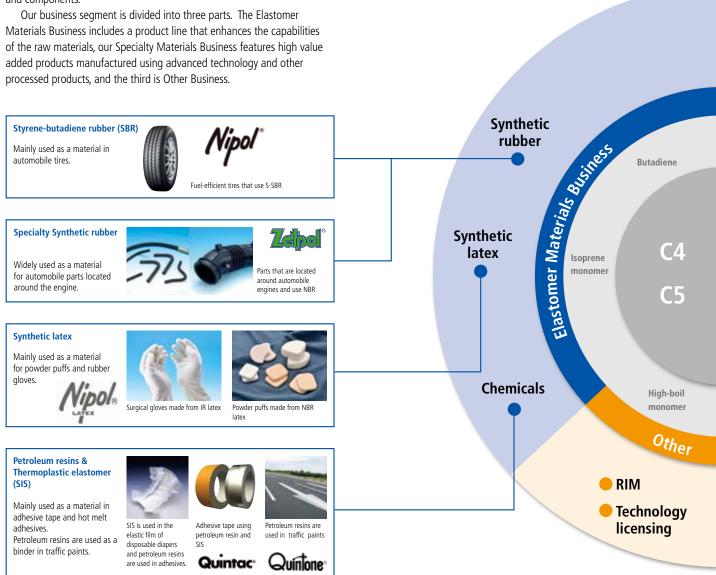
We will continue to contribute to the realization of a pleasant and sustainable society through our world-class technologies and products through of "Speed," "Dialogue," and "Social Contribution." We deeply appreciate your ongoing support and encouragement for ZEON.



Naozumi Furukawa Chairman

## **Profile of ZEON**

ZEON's main products are made from C4, C5 fractions—a derivative of distilled naphtha, which is contained in crude oil. From there, we use substances, such as butadiene and isoprene, which are obtained with proprietary extraction technologies, to manufacture various materials and components.



#### Company profile

**Company name**: Zeon Corporation **Establishment**: April 12, 1950

Capital: 24.211 billion yen (as of March 31, 2014)

Market capitalization: 226.1 billion yen (as of March 31, 2014) Total number of shares outstanding: 242,075,556 shares Employees: 3,186 (consolidated) 1,654 (non-consolidated)

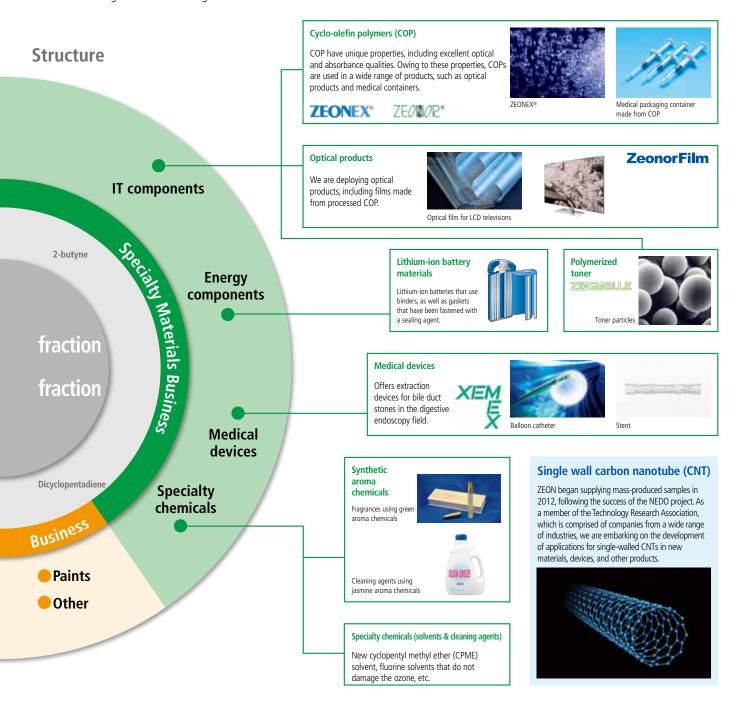
(as of March 31, 2014)

# Consolidated Net Sales (million yen) 350,000 300,000 270,383 262,842 250,763 225,878 200,000 150,000 0 2009 2010 2011 2012 2013 (FY)

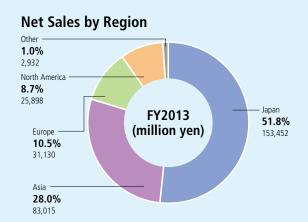
**Business** 

ZEON creates novel products by harnessing our R&D capabilities, which utilize our proprietary strengths, and by tapping into our collective production technologies to contribute to society through the delivery of superior and unique products and services.

Many of ZEON's products have earned the distinction of being No. 1 globally, including being the "first product of its kind in the world" or having the "world's leading market share."







# **Surprisingly ZEON:**

#### **ZEON is All Around Us**

ZEON products are highly versatile, functional materials used in all kinds of things you see and use every day. Take a look around and you might be surprised to find ZEON right under your nose—or even your feet!

Medical fields

#### **Surgical rubber gloves**

Low in impurities and allergens, and with a high resistance to oil and chemicals, these gloves are put to a wide range of purposes, including medical gloves, gloves used in the kitchen and work gloves.

#### **Assistive surgical tools**

Specializing in the circulatory and gastrointestinal systems, we produce balloon catheters and stents.

#### **Paper diapers**

ZEON's elastomer SIS is used for the elasticated tape section.

At home

#### Sink bowls, bathtub pans

RIMTEC, a group company, manufactures and supplies raw materials used to make plastic molded products.

#### Perfumes, shampoos and conditioners

We manufacture aroma chemicals for use in cosmetic and hygiene products, food products and various everyday goods. In particular, our green aroma chemicals take the largest share of the global market.

#### **Powder puffs**

Roughly 90 percent (ZEON estimate) of the world's powder puffs made from NBR latex use ZEON synthetic latex.

ZeonorFilm<sup>™</sup>, produced using the world's first environmentally friendly sheet extrusion process, is used in LCD television displays for its superior optical performance.

#### **Computers**

We manufacture chemicals that are required in the production of substrates that support electronic components.

#### **Housing materials**

ZEON Kasei, a group company, manufactures sound insulating materials and other housing materials.



We provide synthetic rubber for fuel-efficient tires with improved performance in terms of rolling more easily (fuel efficiency) and stopping better (increased safety), which are usually mutually exclusive.

#### **Automotive parts**

Zetpol® is an oil- and heat-resistant, long-lasting synthetic rubber that commands the largest share of the global market. Zetpol® is widely used in automotive parts such as engine timing belts.

#### Lithium-ion batteries

Lithium-ion batteries are used as a power source in a wide array of electronics, from hybrid vehicles to mobile phones and laptop computers. ZEON's binder (an adhesive) helps make batteries safer and last longer.

#### **Dashboards**

Powder slush is used as an internal material in automobiles.





#### **Interview with the President**

ZEON will change by drastically reviewing existing working methods and ways of thinking towards realizing the Enterprise Blueprint for 2020

President Kimiaki Tanaka explains the new SZ-20 Phase I Mid-Term Management Plan, which was initiated in fiscal 2014, and the future prospects in a Q&A format.

Kimiaki Tanaka President



The market value of synthetic rubbers is declining due to the effects of the slump in the price of natural rubber and butadiene, so the situation continues to be difficult for us as a synthetic rubber manufacturer. Drastic changes are occurring in the United States due to the shale gas boom, such as the increasing predominance of ethylene production, which uses ethane as a material, whereas butadiene, which is the main material used in synthetic rubbers, is dependent on oil. Some good results were brought about by the transition to a cheaper yen in fiscal 2013, but the inflated price of domestic naphtha remains high, and the reduced production output of naphtha crackers in Japan is having an adverse effect on domestic production activities.

From a long-term global perspective, the global economy is expected to increase due to the growing population and the economic development of emerging nations, but it seems that even more difficult decisions will have to be made in the Elastomer

Materials Business in terms of low-cost materials procurement and global business expansion.

With regards to the Specialty Materials Business in this environment, we must create high added-value products that are resistant to economic fluctuations by specializing in the three main business areas where market demand is increasing (parts for information use, parts for energy use, and medical devices). That is why we are emphasizing product development, placing products in the market more quickly than before, and efforts towards research and development in these fields.

We want to realize the Enterprise Blueprint as soon as possible for both the Elastomer Business and the Specialty Materials Business.

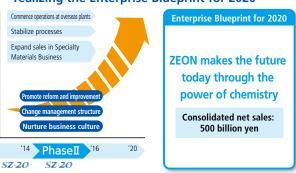
#### What is the main point of the new SZ-20 Phase I Mid-Term Management Plan?

There are two main points to the new SZ-20 Phase II Mid-Term Management Plan. The first is to make a drastic change in the company. By determining what is needed to achieve the Enterprise Blueprint for 2020 from the ground up, promoting reform and improvement in terms of business restructuring, changing structures in terms of existing systems, and, moreover, fostering a climate of changing how we think about work as well as changing the work itself. If something is wrong, we will change it.

The other key point is to gain an understanding of the current situation while implementing plans, and to review and make corrections to the plans in line with the changing environment. Top level management will continually gain an understanding of the current situation through dialogs with worksites in connection to the progress of plans in each division so that the strategy can be dynamically changed and new strategies can be built up by implementing emergent strategies. We want to establish know-how that is unique to ZEON in these processes through Phase II.

"Changing" the company to realize the Enterprise Blueprint for 2020 **Corporate Philosophy** ZEON is contributing to the preservation of the Earth and the prosperity of the human race **ZEON CSR Policy** • We will ensure compliance and meet society's needs for safety and security We will contribute to sustainably developing society and protecting the global environment through our corporate activities We will ensure that each and every ZEON person is aware of CSR and acts accordingly Key sense of value **Enterprise Blueprint for 2020** Speed Dialogue Social contribution **ZEON** makes the future today through the Treasured ZEON characteristics power of chemistry Mutual trust and fellowship During the three-year period, we will "change" the company through a fundamental revision of past practices and approaches to attain our goals **New Mid-Term PhaseII** Management Plan

# Taking on challenges as a second step toward realizing the Enterprise Blueprint for 2020



#### What is the status of the Elastomer Materials Business, which is one of the pillars of the business strategy?

The Elastomer Materials Business is a base business that comprises 60% of ZEON's consolidated sales. Synthetic rubbers are mainly used in automotive applications. Until now, the automotive industry has been seen as a maturing industry. However, due to automobile diversification based on new power sources, including hybrid cars, electric automobiles, and fuel cell vehicles, and due to the economic development of emerging nations, the industry is showing dynamic change to high value added industry that is far from maturing.

Since the 1980's, special rubbers, for which we have developed a global strategy, have become a high-added value, high profit ratio product, especially NBR (nitrile rubber) and Zetpol®, which adds hydrogen to NBR, and acrylic rubber, for which has increased its

global market share following the purchase of TOHPE. In the future, we will work toward raising the barriers to entry and expand the business by strengthening these areas of distinction and introducing technology that is unique to ZEON.

In September 2013, we began operating the Singapore plant as a production site for S-SBR (polymerized styrene-butadiene rubber), a material used in fuel-efficient tires. In order to further reinforce the business, we will increase the added value of product quality in the same manner as special rubbers, and we will maximize the benefits of optimized materials supply.

#### Q4 What is the status of the Specialty Materials Business, one of the other pillars?

The Specialty Materials Business comprises approximately 20% of the consolidated sales amount, so it's still got some way to go. Currently, our optical films are receiving extensive praise for their originality and performance. Specifically, for films used in large-size LCD televisions, and small-to-medium smartphones and tablets, business is increasing and we are speeding up research and development as these industries move very quickly, and there is a severe demand for quality and supply.

With regard to electronics and packaging materials, we are persistently continuing with research and development, as we want to bring about some results in the next three years.

Our materials for energy use are highly regarded by our customers due to the increased safety and capacity. We expect demand to increase greatly if the use of lithium-ion batteries in automobiles goes ahead.

The medical field has a different culture to these industries, but we are planning steady business expansion. In this regard, we want to further reinforce ZEON's proprietary product development and production technology.



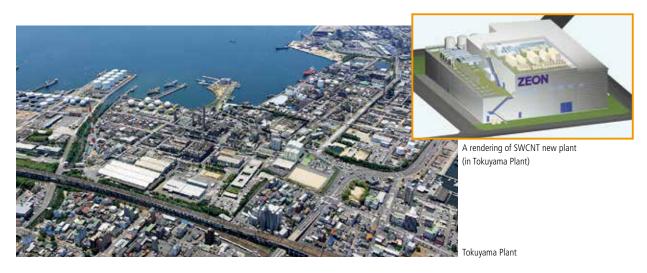
New diagonally stretched retardation film plant (Optes Hokuriku Plant [Tsuruga manufacturing plant])

#### Please tell us about the research and development strategy, and single wall carbon nanotube.

In order to continue producing innovative and original "do not imitate and cannot be imitated" technology, we are maintaining a steady investment into research and development of 12 billion yen annually. Top management will exchange information with research laboratories with more frequency than before in order to work towards industrialization at a faster pace. We are communicating directly with researchers in order to promote research and development that captures seeds of technology based on more accurate decisions.

For single wall carbon nanotube (SWCNT), we have been engaged in research and development with AIST (Advanced Industrial Science and Technology) as a project for NEDO (New Energy and Industrial Technology Development Organization) that

has brought about reliable results. SWCNT was once extremely costly, and it was rarely used for testing. However, we now have an environment where SWCNT can finally be tested in combination with various other materials, as the price is now only 1/1000th of what it once was thanks to mass production technology. For example, combining rubber with several ppm of SWCNT increases heat conductivity and electrical conductivity, and produces an entirely new material. In 2015, we plan to set up the world's first industrial-scale facility at the Tokuyama Plant, which will enable the use of SWCNT as an industrial material. There is still a lot of hidden potential for what can rightly be called a materials revolution, so we, along with those in charge, are excitedly carrying out research and development.



<sub>A</sub>5

#### What are your thoughts on globalization and training employees to support globalization?

Currently, the industry that is particularly moving towards globalization is the Elastomer Materials Business, for which we are forecasting large-scale market expansion overseas. When we started the new plant in Singapore, we invited newly appointed employees to the Tokuyama Plant for fixed term training, and they visited actual worksites in order to learn about cutting-edge production technology. As leaders, they will draw up a manual for the Singapore plant and they will accumulate know-how that can be passed on to the next generation by means of visualization. In order to promote the smooth transition of technology along with the increase in globalization, it is very important that training is carried out in close collaboration with plants in Japan.

"Torchlight (taimatsu) activities" is another activity that we are

expecting will improve the overall nature of employees. This activity focuses on improving employee motivation by imparting a sense of danger that we will not achieve the Enterprise Blueprint for 2020 if we remain as we are. This activity began in fiscal 2012, and employees have been thinking about what they should do in order to improve on their own by, for example, utilizing job the awareness gained from dialogs with other employees in their own jobs. We have plans to develop this activity in Japan and overseas, so I am discussing Torchlight (taimatsu) activities as I visit plants and offices in each region.

#### Please tell us about the status of development and the thinking behind social contribution activities.

We are, of course, contributing to society through our core business, and we must also make contributions to regional communities through non-core business areas. We are also contributing to the development of regional communities through employment. For example, 90% of the employees at the Singapore plant are local employees. In Thailand and Vietnam, we are managing a scholarship program to support students so that they can receive a higher education. At each plant in Japan, we are conducting close exchanges with regional communities through events and cleaning activities, and we are continuing to provide reconstruction support following the Great East Japan Earthquake.

In the United States and Great Britain, we are independently

CSR management and compliance management is about living up to society's expectations, which also means that we should be useful to society by pursuing and increasing added value in our core business, and creating products and establishing technology that is unique to ZEON. As a result, we want to become a company that society cannot do without, which I believe is connected to the Enterprise Blueprint for 2020.



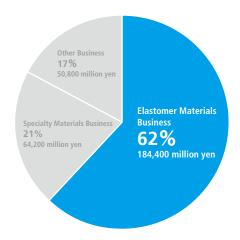
**Elastomer Materials Business** 

Elastomer materials consists of production in the three fields of synthetic rubbers, synthetic latex and chemicals. In 1959, ZEON became Japan's first company to mass-produce synthetic rubbers. Even today, the Elastomer Business is a core ZEON business, providing 60 percent of the total net sales and 80 percent of operating profit.

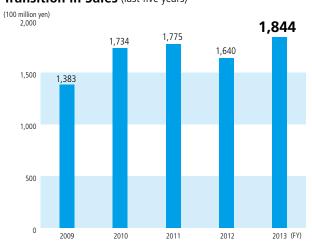
**Yoshimasa Fushimi**Elastomers & Chemicals Businesses
Director & Executive Corporate Officer



#### Net Sales Distribution Ratio (fiscal 2013)



#### Transition in Sales (last five years)



#### **Business Outlook and Future Strategy**

The main materials used in the Elastomer Materials Business are C4 and C5 fractions, which are naphtha based. However, with the reorganization of the ethylene center in Japan, a key issue in the mid-to-long term is securing materials with competitive strength, which is a strategic step towards further development.

The synthetic rubber business largely consists of utilization in the automobile industry. General rubber is mainly used for tires, and special rubbers are mainly used for engine parts.

The new Singapore plant is making S-SBR (solution-polymerized styrene butadiene rubber) for use in fuel-efficient tires. Even in a world of fierce technological competition, ZEON's proprietary technology is being utilized to make unique developments. From now on, while we look towards futuristic increases in ability, the S-SBR business will become even stronger by securing a stable global position. Automobiles are a growth industry, and the demand for tires will undoubtedly increase, so, while it may require some initial investment, I believe we must leave a sufficient margin in this area of activity.

There is steady continuing growth of specialty rubbers such as NBR (nitrile rubber), hydrogenated NBR (Zetpol®) and ACM (acrylic rubber), which are essential and important product materials in the pursuit of more efficient engines for automobiles, and are highly regarded for having a high level of heat-resistance, oil-resistance and durability. With various environmental changes, such as the popularity of hybrid vehicles and electric vehicles, the demand will grow over the next 10 or 20 years. The NBR production system was built up in the 1980s in Japan, America and Europe, but the customer supply chain has become complicated, and the demand has largely moved to Asia, so we are preparing future developments while anticipating reorganization. We want to increase our

competitive power from a global perspective.

In the synthetic latex business, we are focusing on development in growth fields such as isoprene surgical gloves. In order to provide more distinctive products, we will focus ever more on speeding up development.

The Chemicals business makes products that are relatively close to the end product provided to customers, so the customer market is expanding globally. Despite the presence of competitors, business is expanding with the use of C5 fraction materials. Looking to the future, we will develop GPI (ZEON process of isoprene)\* plants overseas and we are also investigating how to extract high purity/low-cost materials from C5 fractions overseas.

The Elastomer Business is growing alongside the increase in global demand, and it will continue to be a key business area for ZEON. We believe that, in order to proactively work towards globalization in the large ZEON Group family, employing local personnel is becoming ever more important.

\* See p.39 ZEON Group History

#### **Business Overview**

#### Synthetic rubbers

We manufacture synthetic rubbers with a variety of strong points, such as SBR (styrene butadiene rubber), which has excellent wear-resistance, BR (butadiene rubber), which has excellent cold-resistance and low exothermicity, and IR (isoprene rubber), which has the same performance as natural rubber.

We supply these rubbers to major tire manufacturers around the world. We also manufacture and sell special synthetic rubbers with excellent heat- and oil- resistance, such as NBR (nitrile rubber), Zetpol® (hydrogenated NBR), ACM (acrylic rubber), ECO (epichlorohydrin rubber), as rubber members of automobile for using around an engine.



Synthetic latex refers to emulsion-type rubbers and resins. ZEON manufactures and sells NBR latex (acrylonitrile-butadiene rubber latex), a material used in products that require oil resistance, such as disposable gloves and powder puffs; and SBR latex, a material used in products such as paper coating and adhesives; and acrylic emulsion, a material used in textile processing and coatings.

We also boast a global share of nearly 90% of latex used in powder puffs.

#### Chemical products

We manufacture petroleum resins, which are used as materials for adhesive tape and glues, and thermoplastic elastomer SIS (styrene isoprene block copolymer). Petroleum resins are also used as materials for traffic paints (road paints). SIS is also used as a material for elastic film in paper diapers.













# **Specialty Materials Business**

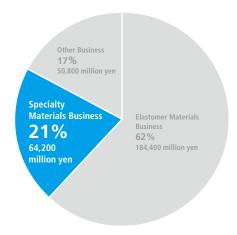
"Specialty materials" refers to materials and components with high added value that use macromolecular design and processing technology.

Focusing on future growth areas, we are positioning the IT components (optical, packaging and electronic), energy components and medical devices businesses as the three key business domains.

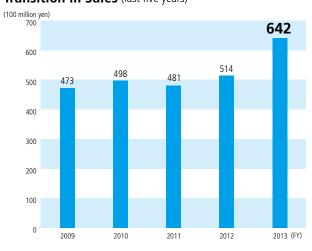
# **Masayoshi Oshima**Specialty Materials Businesses Director & Executive Corporate Officer



#### Net Sales Distribution Ratio (fiscal 2013)



#### Transition in Sales (last five years)



#### **Business Outlook and Future Strategy**

In the Specialty Materials Business, we are using a unique production concept based on innovative original technology to produce various high added-value products without being overly influenced by the conditions of the materials market.

Looking at the sales at the end of fiscal 2013, it is largely comprised of optical films (ZeonorFilm™), which is an optical component. However, while we have expanded in this field, a key point from this three year period is that we have aimed at rapid business expansion for packaging, electronics and energy components.

Although the growth rate in the large-scale LCD television market has slowed down, we expect growth to continue. ZeonorFilm™ is highly rated for its quality in this area of use. In terms of small-to-medium size smartphones, tablet computers, and display terminals using organic EL, for which growth is expected in the future, ZEON's original diagonally-stretching technology is showing its competitiveness. Although it is an extremely fast-moving industry, we want to continue to maintain our predominance by utilizing ZEON's strengths to support Cyclo-olefin polymers (COP) construction design.

Aside from optical films, COP is put to a variety of uses in optical products, including portable camera lenses.

Also, in comparison to traditional glass, it is low in impurities, light and strong, and has other excellent characteristics, which we are utilizing in the development of other uses such as medical packaging materials for vials and pre-filled syringes. As these materials are approved as a set along with the medical products, it takes a very long time to become a product. However, once it has been approved, it will be a very stable and long-lasting product.

In terms of packaging and electronics components, we are

using proprietary ZEON technology to develop new materials that will enable the further miniaturization semiconductors, including insulation materials for big data processing.

With regard to energy components, we are expecting the market to expand greatly providing lithium-ion batteries are utilized in automobiles. ZEON battery binders are able to improve battery performance, so they are showing a greater presence in the market than before. Other than binders, we are expanding the range of products in order to create more revenue.

Although medical devices are not an area of rapid growth, sales are steadily expanding. The issue for us is increasing our technological strength in connection to materials development

unique to ZEON. We are also strengthening our systems while observing the characteristics of the unique medical market.

In the Specialty Materials Business, we will continue to pursue high added-value, and we are putting more effort into research and development in order to place highly-competitive products on the market.

#### **Business Overview**

#### IT components

We supply various components focusing on optics, packaging and electronics.

With regard to optical materials, COP (ZEONEX®/ZEONOR®), which has various advanced characteristics in terms of optical properties and chemical stability, is used for optical components such as small-scale camera lenses, and in optical film (ZeonorFilm™) for LCD televisions and smartphones. In particular, in connection to optical film production, we have created the world's first technology to freely control the arrangement of molecules using the "diagonally stretched retardation film production method." We also manufacture and sell components for packaging used for medical supplies while utilizing the superior qualities of COP.

In terms of packaging components, we manufacture and sell insulation materials for semiconductors, and, in terms of electronics components, we manufacture and sell etching gas for the production of semiconductors.



#### Energy components

Lithium-ion batteries are used, for example, in mobile phones and, more recently, in automobiles. In connection to energy components, ZEON mainly manufactures and sells functional binders for lithium-ion batteries and sealing agents for gaskets.

Aqueous binders for cathodes can restrict the swelling of electrodes, which contributes to heightening the capacity of thin smartphone batteries, etc. We have also successfully developed and can therefore supply environmentally friendly aqueous cathode binders, which are traditionally solvent based. The sealing compound, which is used for sealing, also has excellent heat resistance, which helps to control the escape of electrolytic solutions when under difficult conditions, such as exposure to high temperatures.







Cathode binder

Anode binder

#### Medical equipment (medical devices)

ZEON is developing an integrated structure for development, manufacturing, sales and pharmaceutical affairs, mainly in the areas of circulatory and gastrointestinal systems.

In terms of gastrointestinal systems, we are manufacturing and selling devices for use in endoscopy, including balloon catheters for gall stone removal, and, in terms of circulatory systems, we are manufacturing and selling balloon catheters for IABP and more. We will be expanding overseas in the future.



#### Chemicals

We manufacture and sell synthetic aroma chemicals and chemicals for organic synthesis.

Synthetic aroma chemicals are developed with a priority on safety, as they are used as materials in foods, fragrances and cosmetics. The chemicals that we handle include green aroma chemicals, which produce a sense of freshness, jasmine aroma chemicals, which is the classic scent of flowers, and lactone aroma chemicals, which are essential in dairy products. We have the world's top share in the green aroma chemicals business.

In terms of chemicals for organic synthesis, we have numerous characteristic green chemical products, which are easy to recycle and are highly rated by the market. They are used as solvents for reactions and extraction, and as solvents to clean precision equipment. We also handle solvents for electronic materials development and separation, and we handle products that are used as materials for the middle objects of medicine and agricultural chemicals and for synthesis aroma chemicals. We are expanding into markets in a wide variety of business areas.



#### Polymerized toner

ZEON is the first in the world to successfully achieve industrialscale production of printing toner compatible with digital applications. This was made possible by leveraging the advanced polymer design technology and fine particle control technology cultivated by ZEON through its experience in synthetic rubber and latex.

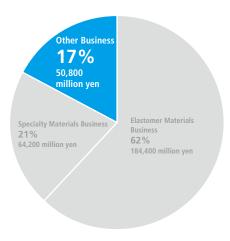
ZEOGLOBULE™ polymerized toner exhibits excellent transferability and dot reproducibility owing to its uniform spherical forms, which yield higher image quality. Moreover, the encapsulated structure enables low temperature fixing, which in turn contributes to faster, energy conserving printing.



## **Other Business**

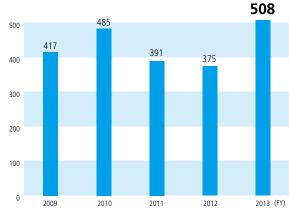
The Other Business segment consists of businesses being carried out mainly by group companies, such as the trading, paints/coatings, engineering, Reaction Injection Molding (RIM), packaging materials, construction materials, and the deodorization related business. It also includes the licensing out of proprietary technologies.

#### Net Sales Distribution Ratio (fiscal 2013)



#### Transition in Sales (last five years)

(100 million yen) 600



#### RIM combination liquid and molded items

We manufacture and sell combination liquid used in the Reaction Injection Molding (RIM) method which utilizes dicyclopentadiene as a raw material. This molding method reduces the use of resources and energy by simultaneously conducting the polymerization and molding inside the metallic mold. The main advantage of this method is that Cyclo-olefin polymers (COP) is derived due to the low melt viscosity. The durability of these molded plastics is on a par with engineering plastics. The waste material from this process can be used in thermal recycling or as solid fuels. It is utilized in large-scale plastic products, such as truck and bus bumpers, windscreens, and the housing for septic tanks for household use, and also for household bathroom sinks and flooring in modular bathrooms.





#### Paints

Tohpe Corporation joined the Zeon Group in 2013. We plan to prepare a lineup of different types of paints for various applications, and develop paints to suit the needs of our customers.



Research and Development (R&D)

The ZEON Group primarily conducts R&D at the R&D Center located adjacent to the Kawasaki Plant, while also carrying out some of its R&D activities in laboratories at other plants. In the Business R&D Division, we conduct research and development in line with Group business strategies while in the corporate R&D divisions, we handle fundamental research and the search for new materials.

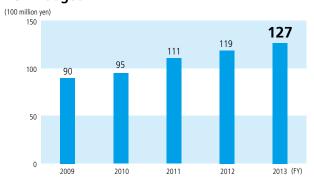
The R&D Center is comprised of buildings 1 through 10. We are constantly rejuvenating our R&D activities by frequently replacing our testing and analysis equipment. We tackle numerous research topics using the latest analysis equipment, such as nuclear magnetic resonance (NMR) spectroscopy, which can analyze solid samples, and a scanning electron microscope (SEM).



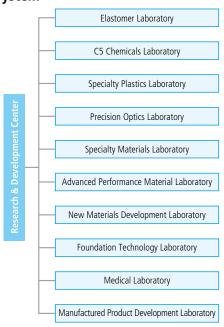
Research & Development
Director & Senior Corporate Officer



#### **R&D Budget**



#### **R&D System**



#### **R&D Strategies**

R&D is also engaging in policy to make major changes going forward by basing our activities on the two pillars of elastomer and specialty materials technologies, which is also one of the goals in our new mid-term management plan. First, we are accelerating the speed of our R&D activities by further devoting ourselves to open innovation with institutions such as universities, R&D institutions, and companies. We plan to fortify our patent strategy of "not imitating others and preventing others from imitating us" by quickly securing patents for the technologies we develop. We also aim to improve the speed, volume, and quality of our R&D activities by fortifying our cooperation with management to quickly carry out assessments and decisions on progress and achievements. We are steadily securing an annual R&D budget of around 12 billion yen.

We plan to secure members for our R&D teams, corresponding with our vision for 2020, and move our R&D teams closer to our production bases. Recently, we transferred our R&D team for toners to the Tokuyama Plant. Positioning R&D teams so that they can observe production activities while carrying out R&D, will make them more cognizant of the production process. This should also reduce the amount of rework in product design that takes place when production is launched. One example of this is the optical film R&D team, which has been located at the Takaoka Plant for some time now. We also aim to encourage employees to transfer between departments and teams. We also plan to create collaborations with customers. By doing so, we look to develop an environment that will provide new stimulus to our R&D team members and conducive to discovering new ideas.

#### Results of the ZEON Group's Creative Research

#### Solution polymerized styrene-butadiene rubber (S-SBR)

S-SBR is a synthetic rubber that is primarily used in manufacturing fuel-efficient automotive tires. Rolling resistance, which affects fuel efficiency, and wet grip are have conflicting characteristics. It is crucial to improve the balance of these two properties. ZEON modified the S-SBR polymer with the goal of improving the dispersion and reinforcement benefits of silica and carbon black compounds thereby developing a technology that offers high-performance and excellent balance for rolling resistance and wet grip, which have conflicting characteristics.

#### Environmentally-friendly cyclopentyl methyl ether (CPME)

Cyclopentyl methyl ether (CPME) is a completely new type of hydrophobic ether solvent produced from ZEON's proprietary raw materials and synthesis technologies. Unlike conventional ether solvents, CPME possesses properties such as high hydrophobicity (easily repels from water) and resists peroxide formation. It has a wide range of uses as a solvent. CPME has been commended for its efficacy, such as in alleviating environmental impact owing to its high degree of recyclability and waste reduction, and also for reducing costs and shortening and simplifying manufacturing processes. We have received awards for our CPME including the SSOCJ Award from the Society of Synthetic Organic Chemistry, Japan, the CPhI Innovation Awards 2010 (Bronze medal) from CPhI Worldwide, and the Profile in Sustainability (product category) from Informex USA.

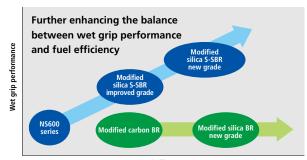
# ● First in Japan to mass produce single-walled carbon nanotubes (SWCNTs) \*Industry-government joint research

SWCNTs are said to be a "dream come true" owing to their advanced mechanical strength and electrical conductivity. However, for many years companies did not move forward with the development of applications for their use given the prohibitive material cost due to obstacles to mass production. ZEON, working jointly with the National Institute of Advanced Industrial Science and Technology, developed mass production technology that achieved SWCNT growth that was 1,000 times faster than conventional methods using a super-growth method\*1. In 2011, we built a plant to carry out a mass production trial run\*2. In 2013, we began supplying mass-produced samples. Working toward our goal of launching full-fledged mass production in the second half of 2015, we plan to construct a manufacturing plant on the site of our Tokuyama Plant. Moreover, the Technology Research Association for Single Wall Carbon Nanotubes (TASC) was established to develop applications for SWCNT, including new materials and devices. The realization of new materials containing SWCNTs is moving closer, and research is progressing in materials such as rubber, copper and aluminum blended with SWCNT. For example, when SWCNTs are blended with copper, the compound material offers resistance properties equivalent to that of copper while offering electrical conductivity 100 times that of copper. Consequently, we anticipate that this will contribute to improving the performance and reliability of electronic devices.

\*1 The New Energy and Industrial Technology Development Organization (NEDO) capacitor development project

\*2 2009 Ministry of Economy, Trade and Industry supplementary budget project

#### Ongoing new product development of S-SBR fuel efficient tires



Fuel efficiency

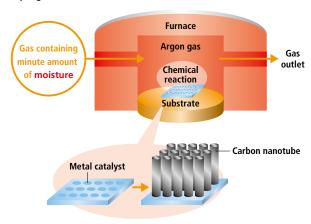


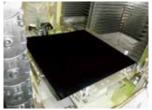
CPhI Innovation Awards 2010 (Bronze medal)



Profile in Sustainability (product category)

#### Super-growth method visual





SWCNT manufactured on Substrate



Height of 2.5mm

**Production Management and Safety** 

In order to implement the Enterprise Blueprint for 2020, "ZEON creates the future today through the power of chemistry", it is essential that we both develop groundbreaking new materials, and improve production in terms of greater cost competitiveness and stabilized production quality.

Accidents occurring at chemical plants affect not only the safety of the employees working on site, but also they have a strong effect on society, including environmental pollution in the local community, and it influences customers in that the supply of products is interrupted. Therefore, ZEON places safe and secure production as themes of particular importance for management.



Division Manager - Production Center Senior Corporate Officer

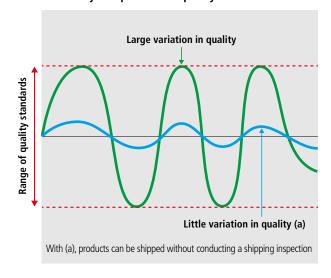


#### Production Innovation and safety initiatives that focus on process stability

#### **Production Innovation and process stability**

Great changes are being made at production sites. Those changes are appearing in the workloads of on-site employees. We are enabling on-site employees to streamline processes by considering the purpose of the workload, and how it can be more efficient. (Daicel's method of production innovation) As a result, this has led to excellent production quality with increased safety and a high production process capacity index (little variation).

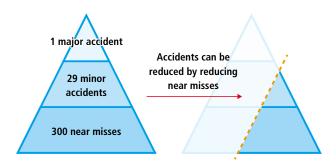
#### Process stability and production quality visual



#### **Production innovation and safety**

According to Heinrich's law, for each major accident, there are 29 minor accidents, behind which are 300 cases of near-miss incidents (frightening or startling dangerous situations). Reducing the number of near misses lowers the risk of a major accident, which helps to establish safety. Production innovation activities that take the load off the plant also serve as countermeasures for near-miss incident level operations. Also, by pursuing the highest level of safety, we can achieve process stability, high cost-competitiveness and stable quality.

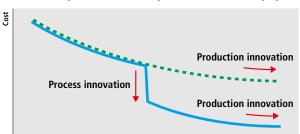
#### Heinrich's Law and Accident Reduction visual



#### **Process Innovation That Brings About Rapid Improvement**

In order to stabilize processes at existing facilities, ZEON production innovation includes steadily improving in each and every area, which is the foundation of everything we do. We are also taking on a new initiative called "process innovation." By changing some manufacturing processes to something completely new, we can achieve great results in a short period of time, which could not have been done with the conventional line of growth. In order to achieve this, we want to set up an internal team and to develop open innovation in collaboration with external specialists and other companies.

#### Connection between production innovation and process innovation from a cost perspective



Time

#### Two Approaches to the Goal of Stabilizing Processes

Production innovation strives to stabilize processes from an onsite perspective by finding and eliminating the causes of existing loads and troubles. On the other hand, process innovation seeks to stabilize processes by means of "change" in that processes are revised by combining acquired technology with the latest technology. ZEON uses both of these approaches as it attempts to improve safety, security and cost-competitiveness. This know-how will be extended to the global production system, and will be used to achieve the Enterprise Blueprint for 2020.

#### COLUMN

#### **Technology Transfer Essentials**

An issue facing many companies is how to pass on the techniques of veteran employees to younger employees.

In terms of personnel training at ZEON, we have a groupwide unified personnel training system, the Monozukuri Training Center to train operators at plants, and safety workshops for the experience of safety rules being implemented.

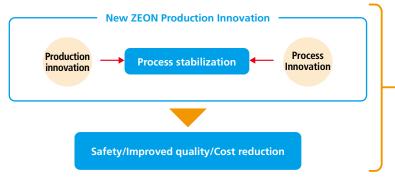
However, the really important thing is not the training itself, but that one can think for oneself in trouble-resolving processes. At ZEON, all of the various duties and their purposes, including trouble-resolution, regularly handled by operators at plants have been visualized, and all of the coping methods have been standardized. The standardization process is discussed between veteran and junior employees, and the operator duties are then included in the plant's operation management systems. There are countless of such processes. For example, at the Mizushima Plant, we analyzed approximately 400,000 operator duties.

At ZEON plants, we don't simply use automatic operations with the correct methods. Rather, when an incident occurs, operators are shown the plant's operational management methods under various circumstances, and they must think for themselves when making a choice. By repeating that process, know-how is passed down and understood, and can therefore be used for oneself. These processes and results are all part of ZEON's technology transfer.



Mizushima Plant Integrated Production Cente

#### New production innovations through process stabilization



Global development



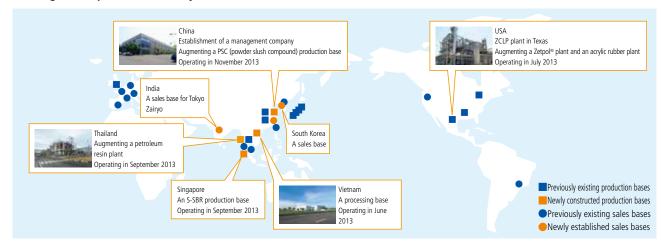
#### Singapore, the first step in global expansion

Jurong Island is man-made and originally consisted of several smaller islands that were connected by landfill. The island is home to chemical companies that manufacture products for the petrochemical industry using chemical substances generated at various stages of the crude oil refining process. ZEON built its new solution polymerized styrene-butadiene rubber (S-SBR) plant on this island. S-SBR is a type of rubber that is mainly used for automotive tires that improve fuel efficiency. Demand for S-SBR is expanding in the automotive market, where companies are competing to deliver products that offer low fuel costs.

There are several factors that prompted ZEON to establish its new plant in Singapore. In Japan, the supply of raw materials is unstable due to a reduction in ethylene cracker production. In contrast, the new plant will have access to a stable source of raw materials owing to the integrated production at the local petroleum refinery. Moreover, the advantages for product distribution are that Singapore has a convenient transport system and there are no customs tariffs on exports. Singapore also boasts a high education level, fueling the availability of talented human resources.

Today, ZEON's customers—manufacturing companies—are expanding globally. In tandem with this, ZEON is also extending its global reach while also maintaining the high added value of its products.

#### Zeon's global expansion in recent years



#### Exhibiting products at the Rubber Technology Expo 2014 in Thailand

We showcased our products at the Rubber Technology Expo 2014, which was held in Bangkok, Thailand over a four-day period (March 12-15, 2014).

We launched production at our new S-SBR plant in Singapore. In Southeast Asia, which is exhibiting solid economic growth, the ZEON Group has several manufacturing plants, including ZEON Advanced Polymix Co., Ltd., ZEON Chemicals (Thailand) Co., Ltd., and ZEON Manufacturing Vietnam Co., Ltd. In Southeast Asian markets, which are gaining worldwide attention as a region that will drive *monozukuri* ("manufacturing craftsmanship"), it is the goal of ZEON, as an elastomer manufacturer, to establish its brand and secure new customers.



# Showcasing products at Rubber & Tyre Vietnam 2014

ZEON exhibited its products at Rubber & Tyre Vietnam 2014, which was held over a three-day period (May 14-16, 2014) in Vietnam's commercial metropolis of Ho Chi Minh, marking the second time that ZEON has participated in this exhibition.

Among ASEAN member nations, Vietnam in particular is exhibiting remarkable growth. At this year's trade show, around 50 companies displayed their wares. ZEON was the only Japanese company to showcase its products.

In Vietnam, which is a producer of natural rubber, also has a high interest in high value-added polymers. Going forward, we see potential for the ZEON brand to grow in this market. This is the second time we exhibited at this trade show. Thanks to the support of ZEON, ZEON Asia Pte Ltd., and ZEON Advanced Polymix Co., Ltd., we believe our exhibition booth was more successful this time around than the first time that we participated in this event.



#### Cultivation of human resources supporting global expansion

At ZEON Chemicals Singapore Pte. Ltd., 90% of the starting members were hired locally in Singapore. The 30% of these employees who have main roles in charge of plant operation were trained in operation management at plants in Japan.

During our process training in Tokuyama in 2012, we were taught the meaning of Zeon CSR and *Goanzen-ni*, which means "safety first", has become part of our daily activities

Through our collective awareness of safety, we have managed to overcome many difficulties during the ZCS start-up together with our Japanese supporters.

We will continue to enhance our safety awareness in our operation activities and also socially, so as to contribute to sustainable growth in ZCS and ZEON globally.

#### **Chris Tan**

ZEON Chemicals Singapore Pte. Ltd. Production Manager



# Creating corporate culture via Torchlight (taimatsu) activities

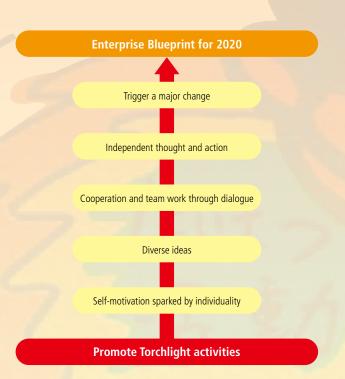
We believe that it will not be easy to achieve the goals in our Enterprise Blueprint for 2020 by relying on our current operations. It is our belief that each individual employee must have the initiative to take action to respond to changes and continue to engage in challenges to meet high goals, even in a rapidly changing environment where the outlook is unclear. In July 2012, we launched our Torchlight (*taimatsu*) activities in each department and group companies as a step toward achieving our Enterprise Blueprint for 2020. The goal of this initiative is to develop and strengthen the key sense of value (speed, dialogue, and social contribution) and treasured ZEON characteristics (mutual trust and fellowship) that are shared by all group employees.



Impetus for attaining the Enterprise Blueprint for 2020



As a step toward achieving our Enterprise Blueprint for 2020, the Torchlight activities encourage each employee to voice, recognize, and think about what is important to them, what they want to do, and what they aim to be, and to take action in this direction. We are calling these activities the "Torchlight" activities because we see a change for the better in each employee as the lighting of a single torch, and envision many torches being lit as our employees pass on this "torch of change."



#### **Departmental Torchlight activities workshop**



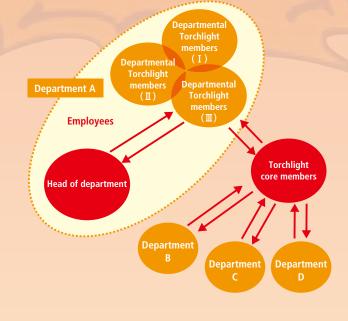


We introduced the following cycle: write your thoughts down⇒share them through dialogue⇒gain new perspectives⇒rework your thoughts. This provides employees an opportunity to think about the activities carried out in their department.



The departmental Torchlight members play a central role in the Torchlight activities of each department. They promote activities while keeping an open line of communication with the head of the department and employees in the department. Meanwhile, the Torchlight core members promote companywide Torchlight activities. They also actively provide support to departmental Torchlight members.

This is the third year of the Torchlight activities. There are 233 employees actively participating as departmental Torchlight members.



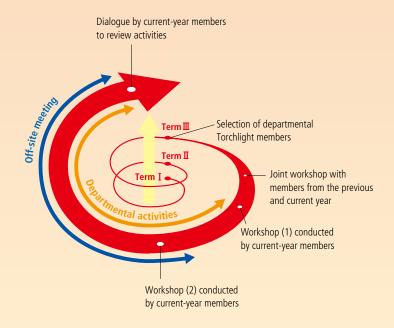


Departmental Torchlight members are active for one year. Some relinquish their positions to new members, while others remain involved in department activities even after the changeover.

At the various workshops the departmental Torchlight members gather together to conduct, participants share their thoughts and realizations regarding the Torchlight activities through dialogue and apply this to the activities that are carried out in the department.

The various activities of each department are held at "off-site" meeting places where people can speak freely when they want. These gatherings are opportunities to share information and to consult on various topics.

By expanding the scope of this cycle, we can pass on the torch of change to more employees.



#### Enterprise Blueprint for 2020 should be every employee's goal

It has been four years, three years as Departmental Torchlight, since just a few of us started off with the thought of realizing the Enterprise Blueprint for 2020 with placing importance on the qualities of ZEON we admire.

During the years, there have been several prime examples that illustrate the Torchlight activities which utilize the talents and characteristic of each member.

A single activity may be a minor change but when looking back at the four years, I feel that this activity is gradually taking root as an initiative in which employees can pursue their personal interests.

Not only will I support the Torchlight activity as a member of the Management, but will also feel, think and act as one of the participants to further spread the light.

#### Yoshiyuki Mitsuhira

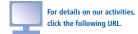
Director & Senior Corporate Officer
Official in charge of Torchlight activity promotion



# **Human Resource Development**

ZEON requires respect for human rights and prohibits discrimination in its CSR Code of Conduct. We strive to be a business that is understanding and accepting of diverse values and where no person is discriminated based on gender, age, nationality, or other attributes. On this basis, our goal is to establish ZEON as an enterprise where every employee\* can work with pride by encouraging employees to continually evolve through the pursuit of high goals based on completely independent thinking, the development of a human resources system that challenges employees to achieve their potential, and the maintenance of comfortable work environments that value dialogue.

ZEON human resource development encourages employees to visualize what they want to become, while ZEON tailors its education and training practices to help each employee bridge the gap between their current and visualized selves and to take daily steps toward that vision. By fairly assessing the results of those actions, which is reflected in how we treat each employee, we encourage employees to set ever-higher goals. As each and every employee pursues specific actions and accumulates changes and improvements, a greater worksite capacity is built up across the company.



Home > CSR Activities > Relationship with Employees

http://www.zeon.co.jp/csr\_e/employee/index.html

#### **Human Resource Development Flow**



\*At ZEON, we use "employee" to describe all workers, including both permanent and part-time workers



Training using simulated plant equipment at the Monozukuri Training Center

# Safety Initiatives

A safe and stable work environment is the foundation of all production activities. ZEON Corporation formulated its safety philosophy in 1997 to direct its safety efforts.

ZEON Corporation places an emphasis on communication between worksite managers and workers in its effort to enhance worksite capacities and build safe and stable production systems. We put considerable effort into 5S safety audits\*1, risk assessments\*2, and identifying near-miss incidents\*3, as well as the provision of hands-on training.

The lost-time accident rate\*4 in fiscal 2013 was lower than the period when there were many such accidents (2005-2007), but we have not yet reached our targets (zero accidents). Rather than being satisfied with this decrease, we will expand our safety activities until we reach zero accidents.

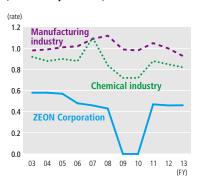
Management is also proactively involved in promoting safety, and they visit the plants for regular reviews by top management, top management consultations, and annual policy explanatory meetings, etc. Aside from this, they also visit the plants to have serious direct discussions with plant employees working on the Production Line. In fiscal 2013, there were 50 days of top management plant visits.

(Also reported in "Production Management and Safety" on p.19.)



Home > CSR Activities > Safety http://www.zeon.co.jp/csr\_e/safety/index.html

# Lost-Time Accident Rates (ZEON Corporation)



\*1 5S Safety Audits Inspections of on-site operations (particularly those that are closely related to safety) when carrying out the SS (seiri, seiton, seisou, seiketsu, and shitsuke or neatness, orderliness, cleanliness hygiene and discipline in English) in order to visualize work locations and review dangerous areas.

\*2 Risk assessment (Kiken Yochi)
Actions taken by workers to analyze and understand unsafe conditions to stop behavior that places themselves in danger

\*3 Near-miss incidents
Unplanned events that nearly result in situations that are both dangerous and frightening or startling.

\*4 Lost-Time Accident Rate

An indicator of the frequency of workplace accidents, calculated using the following formula: Frequency of lost-time accidents = Number of workers who experienced a lost-time accident / Total actual working time × 1,000,000 hours

## **Environmental Initiatives**

ZEON formulated its own Responsible Care Policy in 1998, which embodied and was based on the ideas of responsible care. Established in 2001, our Environmental Philosophy guides our efforts to deliver products with consistent quality through safe and stable production while shrinking our environmental footprint.

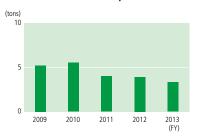
 $CO_2$  emissions in fiscal 2013 were approximately 520,000 tons, or approximately 81% of emissions in fiscal 1990, which is only a small step away from the company's fiscal 2020 target value of being "80% of the 1990  $CO_2$  emissions level." However, the  $CO_2$  emissions level (unit  $CO_2$  emissions) per production volume decreased by 2.7%, which shows that  $CO_2$  reduction initiatives are steadily achieving results. We are investigating further  $CO_2$  emission reduction through, for example, switching the fuels used by plant boiler equipment.

In terms of reducing atmospheric emissions of harmful chemicals, we are proactively promoting the reduction of emissions of butadiene and acrylonitrile, which are substances requiring priority action. Meanwhile, reduction of the total amount of waste disposed became zero, in fiscal 2011 at ZEON and in fiscal 2013 at the Group companies.

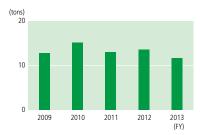
# For details on our activities, click the following URL.

Home > CSR Activities > Environment http://www.zeon.co.jp/csr\_e/environment/index.html

#### **Amount of Butadiene Atmospheric Emissions**



#### **Amount of Acrylonitrile Atmospheric Emissions**



The graph on p. 34 shows the amount of energy used against the CO<sub>2</sub> emissions amounts and sales amounts

# **Quality Initiatives**

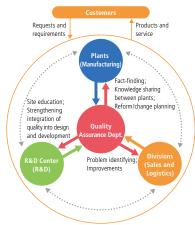
To consistently manufacture products that reflect the needs and wants of customers and to ensure product quality, ZEON is advancing integrated quality assurance activities companywide, across manufacturing, sales and engineering functions, by strengthening cooperation among plants, business divisions and research units (R&D Center). For example, when a complaint is received or a problem occurs within a line, the business divisions, research units, and Quality Assurance Department get actively involved, joining manufacturing departments (plants) in identifying the root cause, taking action, and confirming effectiveness, as well as standardizing processes to prevent a recurrence.

Through these efforts, ZEON is working to improve the consistency of quality and processes so that we are able to deliver to the customer products they will be satisfied with.



 $\label{lower} Home > CSR\ Activities > Quality\ Assurance\ (Relationship\ with\ Customers) \\ \textbf{http://www.zeon.co.jp/csr\_e/quality/index.html}$ 

#### **Quality Assurance System**



#### Contributing to the Preservation of the Earth and to the Prosperity of the Human Race through our Products

Until now, we have built up the foundations for Quality Assurance Risk Management (product liability lawsuits, supply obligation risk, product recall risk, and the risk of credibility loss due to rumor etc.). We are now aiming to build on this foundation with a Quality Assurance System where ZEON attains the satisfaction of all stakeholders, including customers, society and employees, by means of the products we supply. This means that we are developing activities that contribute to the preservation of the Earth and to the prosperity of the human race. Our mission is manufacturing that makes wise use of limited resources.



# **Social Contribution Initiatives**

We believe it is very important to contribute to the development of the local community and build strong relationships of trust to operate stable business activities and produce improved products and services.

#### **ZEON's Basic Policies on Social Contributions**

We believe that traditionally, social contributions are essentially carried out through core businesses. As long as a company is a member of society, the complex set of issues society is facing and corporate activities are not independent of one another. ZEON is embarking on social contribution activities outside the realm of its core businesses to have a broader perspective for engaging with society.

In 2012, we launched CSR Core Projects, which are initiatives we selected from proposals submitted by group companies. The CSR Core Projects are activities that focus on social contributions outside

the scope of core business operations and provide employees with an opportunity to turn their attention toward social issues.

We have planned various activities related to supporting reconstruction after the Great East Japan Earthquake and projects mutually implemented by different offices and group companies. There are also social contribution activities that, to date, have been performed independently by each office and group company. We are developing activities in these three categories while also focusing on synergistic benefits.

#### **CSR Core Projects**

	Projects	Detailed activities	FY2014							
Gre	Great East Japan Earthquake restoration									
	Restoration volunteer tours	Launched October 2012 Implemented 27 times as of March 2014 (total of 174 participants) Disaster restoration assistance (Minamisanriku, Rikuzentakata), agricultural aid (Iwaki), Fishing aid (Kesennuma), etc.								
	Eat and root for restoration! Campaign									
	rticipating in the building of forest embankment to protect es*  Planted Heisei-no-mori in Otsuchi Town (Sponsored by: Yokohama Rubber/Otsuchi Town, Iwate Prefecture) Sponsor and participant since FY2013		Ongoing initiative							
Mu	Mutual projects									
	Summer vacation events, classes where local residents do experiments while touring our offices hemistry classroom Head office: Summer holiday children's chemical experiment show (participating from FY2013) Tokuyama Plant: Experiment class during industrial tourism tour for parents and their children		Unique plan for chemistry classroom (Held in disaster-stricken areas) Expand the number of experiments conducted (Newly create an experiment package)							
	Ecocap recycling (Collecting used plastic caps)	Began count at all group companies from FY2012 FY2013 results: 427,000 caps recycled ⇒ vaccines given to 497 people	Ongoing initiative							
	Green purchasing of office supplies									
Ind	Independent projects									
	Select topics for each promotional committee	Engaging with the local community Participation in local events: Sponsor and cooperate in various events Clean-up activities Educational support: Internships, dispatch lecturers to schools, etc.	Ongoing initiative							

<sup>\*</sup> Building forest embankments to protect lives

These activities are being carried out to create a forest that will act as an embankment protecting local residents against tsunamis. This consists of piecing together debris from the disaster and soil to build an elevated area along the coastline, which was damaged during the tsunamis triggered by the Great East Japan Earthquake. Various trees native to the area are being planted on the elevated ground to create a multilayer forest.



Relationship with Society

http://www.zeon.co.jp/csr\_e/community/index.html

Site Reports

http://www.zeon.co.jp/csr\_e/site/index.html

Response to Great East Japan Earthquake and Tsunami Disaster

 $http://www.zeon.co.jp/csr\_e/introduction/earthquake.html\\$ 

#### Great East Japan Earthquake reconstruction volunteering



We continue to send employees to areas affected by the Great East Japan Earthquake by looking for employees to sign up for a regular restoration volunteer tour. The company covers the entire cost to actively promote employee participation. We turn "support" into "encouragement," and "encouragement" into "exchange." Given the risk that the memory of the devastation will be forgotten, we believe that it is now even more important to continue to undertake these activities. (Picture: In June 2014, volunteers helped build a floating pier on the Karakuwa Peninsula in Kesennuma, Miyagi Prefecture.)

#### **Chemistry classroom**



Based on our motto of "nurturing future Nobel Prize winners in chemistry," we are conducting chemistry experiment classrooms in various regions to teach children that chemistry is fun. It is our desire that children, who are responsible for the future, gain an interest in science, not only chemistry. (Picture: We held an exhibition and workshop called "Welcome to the Labyrinth of Light!" at the "Dream Chemistry 21" Summer Holiday Children's Chemical Experiment Show 2014.)

#### Relationship with Society (Event)



ZEON places great importance on connections with local communities. ZEON offices and group companies hold various events, including summer festivals and actively participate in numerous local events. (Picture: The Tokuyama Plant sponsors the ZEON Waraku Odori Dance Festival, which is a regular summer event that was first held in 1974. Every year, more than 2,000 people participate in the festivities.)

#### **Relationship with Society (Activities with the Local Community)**



We are carrying out activities with local communities in various regions. In 2013, ZEON Chemicals L.P. (ZCLP; US) participated in an exhibition at S.T.E.A.M. (Science, Technology, Engineering, Arts, Math), a program designed for elementary schools. Together with ZCLP employees, more than 400 elementary school students learned about the history of scientific technological development in Kentucky, and also about the value of co-existing with agriculture and the environment through chemical experiments and interacting with turkeys.

#### Cooperating in tree planting in disaster-stricken areas



From 2012, the town of Otsuchi Town (Iwate Prefecture) and Yokohama Rubber Co., Ltd. have been holding a tree planting campaign, Heisei-no-Mori, in Otsuchi Town as a model case to create a forest embankment to protect the lives of the local community. ZEON began cooperating in this tree planting campaign in 2013. In 2014, the third time we cooperated in the event, 24 employees, including the chairman, partook in this campaign. We, along with local residents, planted 15 different types of tree seedlings. (Picture: Tree planting in April 2014.)

#### Relationship with Society (Educational support)



Our offices and group companies implement exchanges with and offer assistance to various educational institutions. ZEON offers internships for high school, vocational high school, and university students and actively give tours of our plants to school children. We also dispatch partime lecturers to schools. In FY2013, we took in 37 interns. (Picture: We gave a tour of our Mizushima Plant to students from a local technical high school in May 2014.)

#### **Relationship with Society (Clean-up activities)**



With the goal of implementing activities that are helpful and which will make local residents happy, our offices and group companies are embarking on clean-up activities in local communities, not only in areas around our offices and plants. (Picture: In June 2014, 170 employees from the ZEON Takaoka Group (ZEON, ZEON North Co., Ltd., ZEON Medical Inc., and Optes Inc.) to participate in clean-up activities along the Himi Coast.)

#### **Promotion of Cultural Activities**



Tohpe Corporation established the Tohpe Dip Art Association to develop cultural businesses incorporating paint and is promoting American flowers (handcrafted flowers made with paint). The association was founded in 1973. There are around 1,000 members nationwide. Exhibitions are held in various areas nationwide every year. (Picture: In May 2014, an exhibition was held at the Ikebukuro Sunshine City Cultural Center.)

# **CSR** Implementation Plan

The following includes various initiatives in the Enterprise Blueprint for 2020 for each category and other specific initiatives we implemented.

	Category	Enterprise Blueprint for 2020	Specific Efforts (FY2013 goals are shown in blue)		
	ď)	<ul> <li>Mid-Term Management Plan goals have been achieved, and dividend distribution is stable and continuous</li> </ul>	●Implement stable distribution of dividends FY2013 forecast of 13.00 yen		
	Corporate governance	A world-class risk management system has been built, is being operated throughout the ZEON Group, and has gained the trust of society	Implement risk management activities in accordance with ISO 31000		
	og og	A business continuity management system is being deployed throughout the Group (various types of business continuity plans (BCPs) have been formed and are revised regularly through training, etc.)	Formulate business continuity plans (BCPs) and switch to business continuity management (BCM) system		
	Compliance	Compliance awareness is widespread and allows ZEON to respond to environmental changes	Revise company rules regularly (in accordance with the revision of laws and regulations) Hold workshops on legal and regulatory compliance Simultaneously inspect legal compliance Consolidate and establish clear and concrete company rules among overseas group companies Support the establishment of compliance system at overseas group companies		
	ation	<ul> <li>Information is disclosed quickly and appropriately (including negative information regarding business conditions, CSR, risks, etc.)</li> </ul>	Hold financial results briefing     Publish various reports     Disseminate information via the company website     Hold briefings for individual investors and analysts in Japan and overseas and respond to media inquiries		
	Information	Information on trade secrets is managed appropriately	Appropriately enforce company rules (information management regulations, personal information protection management rules, etc.)     Provide e-learning courses     Construct and operate information management systems		
			● Eradicate security irregularities Implement plant safety evaluation (100%) Implement specialized RC audit (more than once per year for all four plants) Training to boost accident prevention awareness (implement at four plants and one group company)		
			● Eradicate security irregularities Zero security irregularities		
	-≰		<ul> <li>Achieve eradication of industrial accidents</li> <li>Zero occupational accidents resulting in lost workdays and serious accidents without lost workdays</li> </ul>		
	quali		Promote logistics safety Zero logistics accidents		
	and	■All worksites have reduced their environmental impact which has gained social appraisal	● Eradicate environment irregularities Zero environment irregularities		
	ıfety,		Reduce environmental impact (promote voluntary control plans for air pollution and toxic substances) Acrylonitrile emissions in FY2012 of 13.6 tons ⇒ reduce to 10 tons		
	ent, se		Reduce environmental impact (promote zero emission plan for industrial waste)     Target amount lower than FY2012 actual of 9.6 tons		
	Environment, safety, and quality		Reduce environmental impact (promote zero emission plan for industrial waste) Final disposal of domestic group company industrial waste for landfill under 7.5 tons (Final landfill disposal rate: FY2007 emissions standard) 0.3%		
	ш		■Reduce environmental impact (fortify companywide energy-saving project) Reduce unit energy consumption to 66% from 67.8% versus the level in FY1990 Reduce unit CO₂ emissions to under 68.7% versus FY1990 (below actual for FY2012)		
		●Levels of both quality and cost are the best in the world	<ul> <li>Implement a quality management system based on ISO 9001</li> <li>Management of quality assurance risks (product liability lawsuits, supply obligation risk, product recall risk, and the risk of credibility loss due to rumor)</li> <li>Improving processes (reducing losses and improving consistency)</li> </ul>		
		<ul> <li>Procurement is being promoted that includes considerations to reduce environmental impact based on CSR procurement policy</li> </ul>	Determine and understand the state of CSR procurement guidelines, share with business partners		
	s and labor tices	Promote work-life balance (harmony between work and life) to enable people to work and raise children or care of sick parents	Appropriately operate a system to promote child-rearing  Implement program for reinstatement in workplace for employees taking child-rearing or nursing care leave  Introduce flexible work hours, employ discretionary working system for management-related work  Appropriately enforce sexual harassment prevention regulations		
	Human rights and labor practices	• The workplace has been revitalized by the promotion of diversity and the fair and equitable treatment of personnel	Appropriately operate human resource systems (individual report and evaluation systems, etc.)  Hire non-Japanese employees (mid-career applicants and students studying in Japan)  Expand rehiring program of retired employees  Support development of employee skills and career  Implement MD Committee* activities by female members (*committee comprised solely of female employees, promote cost cuts)		
	Social contribution	<ul> <li>An organization has been established to promote volunteer activities for employees including retirees that allows employees to actively volunteer in various ways</li> </ul>	Raise employee social contribution awareness (includes CSR training)     Upgrade and enhance CSR promotion system     Introduce volunteer activities and promote and support participation		
	Social c	<ul> <li>There is understanding and appraisal for ZEON's social contributions (ZEON actively participates in and supports environmental protection and social welfare programs being promoted in each country and region)</li> </ul>	● Materialize and implement CSR activities being promoted by the entire ZEON Group ● Materialize and implement CSR activities being promoted by all worksites ● Implement CSR activities unique to individual worksites		

In FY2013, in the categories of management and human rights and labor practices, we achieved our goals but in the category of environment, safety, and quality, there are still issues that require further attention. In FY2014, we continue to work as a unified group to implement these initiatives.

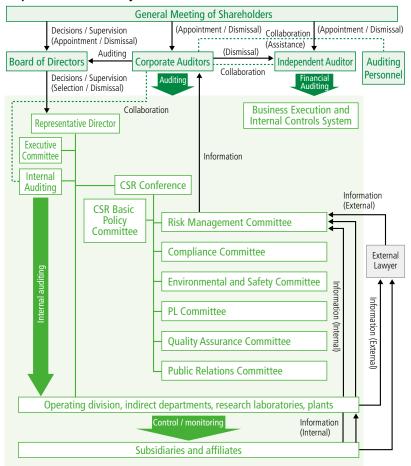
Annual dividend 13.00 yen    Annual dividend 13.00 yen
Improved risk management activities in accordance with ISO 31000 (reviewed FY2013 risk list to reflect confirmation and feedback on progress in risk response plan)  Promoted the establishment and creation of business continuity plans (BCP) Continued to implement training based on the Earthquake Disaster Response Manual  Fully educated domestic group employees on Japan's Subcontract Act, Antitrust Law, and trade secret management Held workshops on legal and regulatory compliance at each office in Japan and abroad Simultaneously inspected legal compliance at each office in Japan and abroad Simultaneously inspected legal compliance moltro Published a Chinese language CSR text  Supported establishment and maintenance of compliance systems at Asia group companies  Prinancial results briefing: Held quarterly Disseminated appropriate information via the company website Participated in company pirefing for individual investors Participated in investment conference for overseas investors  Participated in investment conference for overseas investors  Participated in investment conference for overseas investors  Improve risk management activities in accordance with hallow the horizontal deployment of pronounced risks at other department of the horizontal deployment of pronounced risks at other department of pronounc
improved is x management activities in accordance with ISO 31000 (reviewed FY2013 fisk list to reflect confirmation and reedback on progress in risk response plan)  Promoted the establishment and creation of business continuity plans (BCP) Continued to implement training based on the Earthquake Disaster Response Manual  Fully educated domestic group employees on Japan's Subcontract Act, Antitrust Law, and trade secret management Held workshops on legal and regulatory compliance at each office in Japan and abroad Simultaneously inspected legal compliance:Implementation 100% Gathered suggestions for a CSR and compliance employees on Japan's Subcontract Act, Antitrust Law, and trade secret management Held workshops on legal and regulatory compliance at each office in Japan and abroad Simultaneously inspected legal compliance employees on Japan's Subcontract Act, Antitrust Law, and trade secret management Held workshops on legal and regulatory compliance of compliance employees on Japan's Subcontract Act, Antitrust Law, and trade secret management Held workshops on legal and regulatory compliance of compliance employees on Japan's Subcontract Act, Antitrust Law, and trade secret management Held workshops on legal and regulatory compliance of compliance employees on Japan's Subcontract Act, Antitrust Law, and trade secret management feature  Revise company rules regulatory (in response to revisions etc.) Hold workshops on legal and regulatory compliance of legal compliance of legal compliance employees on Japan's Subcontract Act, Antitrust Law, and trade secret management systems at Asia group companies  Participated in company briefing for individual investors and analysts in Japan and abroad of the reports Disseminated appropriate information via the company website Participated in information security training (e-learning) Errollment 99.9% Information security training (e-learning) Errollment 99.9% Revised affiliate regulations in line with completion of information management system Chinese-language version CSR
Fully educated domestic group employees on Japan's Subcontract Act, Antitrust Law, and trade secret management Held workshops on legal and regulatory compliance at each office in Japan and abroad Simultaneously inspected legal compliance:Implementation 100% Gathered suggestions for a CSR and compliance motto Published a Chinese language CSR text Supported establishment and maintenance of compliance systems at Asia group companies  Financial results briefing: Held quarterly Disseminated appropriate information via the company website Participated in company briefing for individual investors Participated in investment conference for overseas investors  Information security training (e-learning):Enrollment 99.9% Revised affiliate regulations in line with completion of information management system Completed information security structure and system at overseas group companies  Implemented plant safety evaluation (100%)
Published a Chinese language CSR text  Supported establishment and maintenance of compliance systems at Asia group companies  Financial results briefing: Held quarterly Disseminated appropriate information via the company website Participated in investment conference for overseas investors Participated in investment conference for overseas investors  Information security training (e-learning):Enrollment 99.9% Revise defiliate regulations in line with completion of information management system Completed information security structure and system at overseas group companies  Provide e-learning courses  Implemented plant safety evaluation (100%)
Publish various reports  Information security training (e-learning): Enrollment 99.9%  Information security training (e-learning): Response rate 99.7%  Revised affiliate regulations in line with completion of information management system  Completed information security structure and system at overseas group companies  Prublish various reports  Launched Chinese-language version of website  Launched Chinese-language version of website  Launched Chinese-language version of website  Publish various reports  Disseminate information via the company website  Hold briefings for individual investors and analysts in Jag overseas and respond to media inquiries  Appropriately enforce company rules (information management regulations, personal information protection management etc.)  Provide e-learning courses  Implemented plant safety evaluation (100%)
<ul> <li>Information security audit (information security voluntary diagnosis):Response rate 99.7%</li> <li>Revised affiliate regulations in line with completion of information management system</li> <li>Completed information security structure and system at overseas group companies</li> <li>Implemented plant safety evaluation (100%)</li> </ul>
Implemented plant safety evaluation (100%)
Implemented specialized RC audit (more than once per year for all four plants) Provided training to boost accident prevention awareness (implemented at four plants and one group company)  Education on examples of accidents (Kawasaki Plant)  Training to boost accident prevention awareness (implemented at four plants and one group company)
● Two security irregularities ★☆☆ ■ Zero security irregularities
● Two industrial accidents that results in lost workdays  ◆☆☆  ■Zero occupational accidents resulting in lost workdays a serious accidents without lost workdays
■Zero logistics accidents ★★★ ■Zero logistics accidents
■Zero environment irregularities ★★ ■Zero environment irregularities
●Acrylonitrile emissions totaled 11.7 tons ★★☆ ●Acrylonitrile emissions under 12 tons
● Final landfill disposal was 1.3 tons ★★ ● Lower than the 1.3 tons which was the actual for FY201
● Final landfill disposal for domestic group companies: 11.2 tons  ● Final landfill disposal for domestic group companies: 11.2 tons  ◆★☆☆  ● Final landfill disposal for domestic group companies of landfill disposal rate: FY2007 emissions so 0.3%
● Unit energy consumption 65.1% versus level in FY1990  ● Unit CO₂ emission 67.8% versus level in FY1990  Unit CO₂ emission 68.2% or lower versus level in FY1990
Underwent ISO 9001 renewal screening and retained certification Implemented various initiatives to enhance product safety and quality (Details are on our website: Home > CSR > Quality Assurance (Relationship with Customers)  Using quality assurance risk management as a foundatic aim to build a quality assurance structure that satisfies a stakeholders, including customers, the public, and emplother through the supply of products
●CSR Procurement Guidelines and the Requests for Suppliers, were disclosed on the website ●Implemented survey of suppliers (67 companies, mainly domestic primary suppliers)  ■ Share information on CSR procurement with business parameters (hold briefings, write letters, etc.)
Achieved goals set in action plan for employers regarding countermeasures to support the development of the next generation (established in FY2010) and satisfied certain requirements. Accordingly, received the Kurumin accreditation mark from the Ministry of Health, Labour and Welfare as a company that supports child-rearing (Details are on our website: Home > CSR > Relationship with Employees > Creating Workplace Environments that Protect Human Rights and Health)  A **  (Handled as a daily management activity)
Ratio of employees with disabilities (parent) 2.18% (FY2012 2.06%) Rehiring of retired employees Six out of seven retirees (Details are on our website: Home > CSR > Relationship with Employees > Employment and Diversity)  (Handled as a daily management activity)
<ul> <li>CSR briefings held at each office and domestic group companies</li> <li>Supported establishment of CSR Promotion Structure for companies that were newly incorporated into the ZEON Group</li> <li>Number of employees that participated in restoration volunteer tours 15 times and 126 employees</li> </ul>
○ Created a system for sponsoring social contribution

# **Corporate Governance**

ZEON aims to increase profits and achieve ongoing corporate value enhancement while respecting and balancing the various interests of its shareholders and other diverse stakeholders. To this end, we are making ongoing efforts to establish a system that enables efficient and sound corporate management through corporate governance.

Putting into place a corporate governance system allows us to clarify the functions and roles of each organizational entity within the company and to carry out quick decision-making and execution. We are also improving business transparency through appropriate monitoring and disclosure of activities and their effects. We are determined to further enhance our corporate governance system in order to carry out these functions effectively.

#### **Corporate Governance System**



# **Risk Management**

The Risk Management Committee and the Compliance Committee, along with the Compliance Committee's subcommittees—the Antitrust Law Regulatory Subcommittee, the Export Security Control Subcommittee, the Corporate Governance Subcommittee, and the Information Security Subcommittee—are advancing ZEON's risk management and compliance efforts.

#### **Board of Directors**

The Board of Directors meets, in principle, every month with corporate auditors in attendance to ensure compliance with applicable laws and the articles of incorporation in the execution of business. The role of the Board of Directors besides statutory duties is to make important decisions about basic management policy and strategy and other aspects of business execution. The Board of Directors currently consists of 11 directors, including two outside directors.

#### **Executive Committee**

The Executive Committee, in accordance with Executive Committee regulations, comprises the President, and executive officers ranked senior corporate officer or above and meets, in principle, twice a month to examine and make decisions on important business matters after due deliberation involving consultation with attending full-time corporate auditors. Important agenda items, as stipulated in regulations for the Board of Directors, are examined and decided by the Board of Directors.

#### **Board of Corporate Auditors**

The Board of Corporate Auditors comprises five members, including three outside corporate auditors. The board reports, discusses and resolves important matters. In accordance with auditing guidelines established by the Board of Corporate Auditors, each corporate auditor audits the duties executed by directors through various means, such as attendance at Board of Directors meetings and monitoring of business operations, including subsidiaries' operations. The Board of Corporate Auditors was convened eight times during fiscal 2013.

# ZEON Group's Risk Management and Compliance System



#### Directors and Officers (as of October 1, 2014)

#### Directors



Chairman Naozumi Furukawa Chairman of Tohpe Corporation



President Kimiaki Tanaka



Director & Executive Corporate Officer Yoshimasa Fushimi Elastomers & Chemicals Businesses



Director & Executive Corporate Officer Masayoshi Oshima Specialty Materials Businesses



Director & Senior Corporate Officer Tadayuki Minami Administration President of Tohpe Corporation



Director & Senior Corporate Officer Hiroshi Takegami CSR and Production & **Engineering Technologies** 



Director & Senior Corporate Officer Yoshiyuki Mitsuhira Research & Development



Outside director Haruo Itoh Adviser - FUJI ELECTRIC CO., LTD.



Outside director Takao Kitabata



Director & Corporate Officer Hiroyuki Hirakawa Division Manager - Synthetic Rubber Deputy Manager - Elastomers & Chemicals Businesses



Director & Corporate Officer Kei Itoh Division Manager - Corporate Planning

#### **Corporate Auditors**

Audit & Supervisory Board Member Jun Hasegawa

Audit & Supervisory Board Member Seiichi Okada

Audit & Supervisory Board Member (External)

Yuzuru Fujita Supreme advisor of Asahi Mutual Life Insurance Company

Audit & Supervisory Board Member (External)

Tadanobu Nagumo

Chairman and CEO and Representative Director of The Yokohama Rubber Co., Ltd.

Audit & Supervisory Board Member (External) **Nobuhiro Mori** 

#### Corporate executive officer

Senior Corporate Officer

Hiroshi Asahina

President of Zeon Chemicals Singapore Pte. Ltd.

Senior Corporate Officer

Toru Nishijima

Division Manager - Production Center

Corporate Officer

Hirofumi Imai

Division Manager - Raw Material & Logistics General Manager - Raw Material Procurement General Manager - Logistics & Transportation

Corporate Officer

Hiroshi Fujisawa Plant Manager - Takaoka Plant

Corporate Officer Toshiaki Saya Plant Manager - Tokuyama Plant

Noboru Yanagida

Division Manager - Specialty Chemicals

Corporate Officer

Corporate Officer

Corporate Officer

Takeo Furuya

Division Manager - Corporate Administration General Manager - Accounting & Finance President of Zeon F & B Co., Ltd.

**Toshihiro Inoue** 

Division Manager - Synthetic Latex

Corporate Officer

Tomoyuki Kose Plant Manager - Mizushima Plant

# Data Highlights

Herein, we disclose a portion of our earnings data.

For more details on our financial data, please see Fact Book 2014 in the IR section of our website: http://www.zeon.co.jp/ir\_e/library/factbook.html

Graphs illustrating our consolidated net sales, consolidated operating income, and net sales by region can be found on page 3.

A graph outlining our R&D expenses is on page 17.



#### Five-year summarized financial data

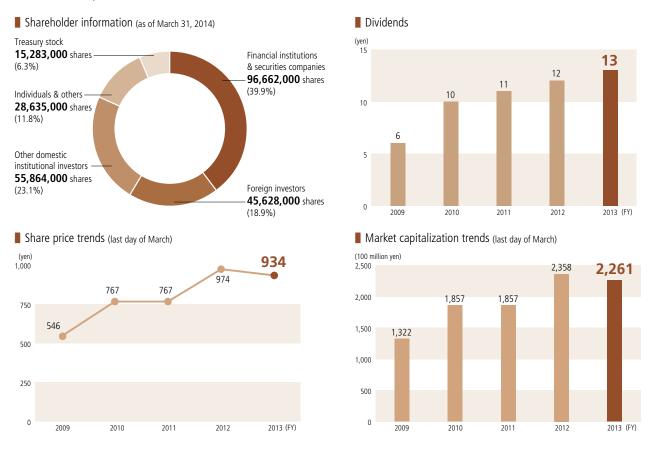
(million yen)

	2009	2010	2011	2012	2013
Net sales	225,878	270,383	262,842	250,763	296,427
Ratio of overseas production	<u>·</u>	18%	19%	21%	22%
Operating income	9,319	35,295	32,123	23,696	29,901
Ordinary income	9,448	33,623	31,487	25,212	32,561
Net income	5,020	18,303	19,127	14,750	19,650
Total assets	281,053	290,596	311,925	350,508	370,872
Net assets	108,072	118,767	135,480	162,057	181,414
Capital expenditures	11,326	10,329	22,995	23,489	27,111
Depreciation & amortization	22,256	21,125	19,885	18,122	17,068
R&D expenses	8,954	9,532	11,106	11,895	12,661
Environmental and Safety Investment*	1,760	470	2,670	2,160	3,470
Social Contribution Investment*	_	34	101	70	98
Operating margin	4.1%	13.1%	12.2%	9.4%	10.1%
Return on Equity (ROE)	5.0%	16.7%	15.5%	10.1%	11.7%
Equity ratio	37.2%	39.5%	42.5%	45.2%	47.9%
BPS	443.2	497.1	573	685.6	783.1
Interest-bearing debt	172,981	171,828	176,444	188,451	189,457
Cash flows	1,726	8,695	(1,595)	(1,803)	(5,222)
Net cash provided by (used in) operating activities	42,956	48,100	32,009	33,061	36,396
Net cash provided by (used in) investing activities	(12,346)	(9,635)	(27,644)	(24,858)	(31,513)
Net cash provided by (used in) financing activities	(28,884)	(29,770)	(5,960)	(10,006)	(10,105)
Dividend per share (¥)	6.0	10.0	11.0	12.0	13.0
Employees (people)	2,815	2,836	2,857	3,136	3,186
Lost-time accident rates	0.00	0.00	0.47	0.46	0.46
Energy usage (crude oil equivalent, 1,000 kl)	234	263	256	237	243
CO <sub>2</sub> emissions (1,000 tons)	624	695	670	601	640
*7EON Corporation only		•		•	

<sup>\*</sup>ZEON Corporation only

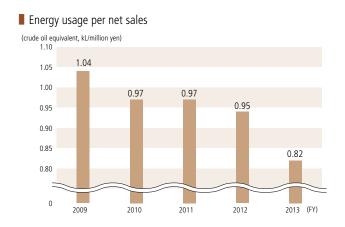
#### **Share information**

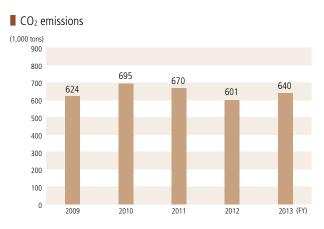
ZEON's shares are listed on the 1st section of the Tokyo Stock Exchange. The company has a total number of common shares outstanding of 242,075,000. As of March 31, 2014, there were 11,705 shareholders (increase of 917 registered shareholders at the end of the previous fiscal year). In accordance with our basic policy to consistently and stably distribute surplus earnings to our shareholders, in FY2013 we paid out a per-share annual dividend of 13 yen, an increase of one yen higher than a year earlier. Moreover, in February 2014, we repurchased 4,876,000 shares from the open market.



#### **Environmental information**

Each year, we set goals and work to alleviate our burden on the environment. We are moving forward with large-scale investment for a clean fuel conversion program to switch from heavy oils to LNG at our plants to reduce our greenhouse gas emissions and to conserve energy consumption. In FY2009, we achieved the goals for the energy consumption unit, which is a yardstick for energy conservation, set by the Japan Chemical Industry Association (JCIA) (80% of levels in FY1990 by sometime between FY2008-FY2012). Since then, we have set our own independent goals and have been making an average improvement of 1% annually.





# Major Sales & Production Bases

ZEON is moving forward with the globalization of its businesses operations, having turned its attention to overseas markets in the 1970s. We are setting up sales networks in major markets around the world and establishing a production system for rubber and resin products. In addition, we have R&D facilities in the US and Europe. We are also building R&D and sales base in China, a market which is growing rapidly. We are aiming to become a company that, through its local production systems, builds close ties with local communities and contributes to the global society.

#### Global bases (as of April 1, 2014)

#### Europe

- Zeon Chemicals Europe Ltd.
- ■Zeon Europe GmbH
  - Zeon Europe GmbH Branch in France
  - Zeon Europe GmbH Branch in Spain
  - Zeon Europe GmbH Branch in Italy
- Telene S.A.S.



Zeon Chemicals Europe Ltd. U.K. Plant



Zeon Europe GmbH





Zeon Polymix (Guangzhou) Co., Ltd.



Zeon Kasei (Changshu) Co., Ltd.



Zeon Chemicals (Thailand) Co., Ltd.



Zeon Advanced Polymix Co., Ltd.



Zeon Manufacturing Vietnam Co., Ltd.

#### Asia and Oceania

- Zeon (Shanghai) Co., Ltd.
- Zeon Trading (Shanghai) Co., Ltd.
- Shanghai Zeon Co., Ltd.
- Zeon Polymix (Guangzhou) Co., Ltd.
- Takehara Zeon (Shanghai) Co., Ltd.
- Suzhou Rui Hong Electronic Chemicals Co., Ltd.
- Zeon Kasei (Changshu) Co., Ltd.
- Zeon Korea Co., Ltd.
- ■Zeon Shinhwa Inc.
- Zeon CSC Corporation
- Zeon Asia Pte Ltd.
- ■Zeon Asia Malaysia Sdn. Bhd.
- Zeon Chemicals Singapore Pte. Ltd
- Zeon Chemicals (Thailand) Co., Ltd.
- Zeon Advanced Polymix Co., Ltd.
- Zeon Manufacturing Vietnam Co., Ltd.



Zeon Chemicals L.P.



Zeon Chemicals L.P. R&D Center



Zeon Chemicals L.P.

#### The Americas

- ■Zeon Chemicals L.P.
  - ■Zeon Chemicals L.P. West Coast Office
  - ■Zeon Chemicals L.P. R&D Center
  - ■Zeon Chemicals L.P. Kentucky Plant
  - ■Zeon Chemicals L.P. Mississippi Plant
  - ■Zeon Chemicals L.P. Texas Plant
- ■Zeon do Brasil Ltda

#### Japan (as of April 1, 2014)

- Zeon Corporation
  - Head Office
- Tokuyama Plant
- R&D Center
- Mizushima Plant
- Takaoka Plant
- Osaka Office
- Kawasaki Plant
- Nagoya Office
- Zeon Kasei Co., Ltd.
- Tokyo Zairyo Co., Ltd
- Zeon North Co., Ltd.
- ■Zeon Yamaguchi Co., Ltd.
- ■Zeon F&B Co., Ltd.
- Zeon Medical Inc.
- Zeon Polymix Inc.
- RIMTEC Corporation
- Tohpe Corporation
- Zeon Chemicals Yonezawa Co., Ltd.
- Ibaraki Zeon Kasei Co., Ltd.
- Okayama Butadiene Co., Ltd.
- Zis Information Technology Co., Ltd.

Head Office
R&D Center

Kawasaki Plant



Mizushima

Osaka

Nagoya Office

■Takaoka Plant





Mizushima Plant





Tokuyama Plant



Kawasaki Plant/R&D Center

# Group Company Data

#### **ZEON Corporation**

#### Head Office

Shin Marunouchi Center Building, 1-6-2 Marunouchi, Chiyoda-ku, Tokyo 100-8246, Japan Tel: +81-3-3216-1772 Fax: +81-3-3216-0501

#### R&D Center

1-2-1 Yako, Kawasaki-ku, Kawasaki, Kanagawa 210-9507, Japan Tel: +81-44-276-3721 Fax: +81-44-276-3720

#### Takaoka Plant

630 Ogino, Takaoka-shi, Toyama 933-8516, Japan Tel: +81-766-21-0252 (Direct) Fax: +81-766-21-8201

#### Kawasaki Plant

1-2-1 Yako, Kawasaki-ku, Kawasaki, Kanagawa 210-9507, Japan Tel: +81-44-276-3700 (Direct) Fax: +81-44-276-3701

#### Tokuyama Plant

2-1 Nachi-cho, Shunan-shi, Yamaguchi 745-0023, Japan Tel: +81-834-21-8501 (Direct) Fax: +81-834-21-8793

#### Mizushima Plant

2767-1 Kojima Shionasu Aza Niihama, Kurashiki-shi, Okayama 711-8511, Japan Tel: +81-86-475-0021 Fax: +81-86-475-1169

#### Osaka Office

Yotsubashi Park Building 3rd Floor, 1-4-10 Itachibori, Nishi-ku, Osaka 550-0012, Japan Tel: +81-6-6536-2930 Fax: +81-6-6536-2932

#### Nagoya Office

TAK Building, 3-134 Hongo, Meito-ku, Nagoya 465-0024, Japan Tel: +81-52-769-5861 Fax: +81-52-769-5863

#### ZEON Group (Consolidated subsidiary)

#### Japan

#### Zeon Kasei Co., Ltd.

Shin Marunouchi Center Building, 1-6-2 Marunouchi, Chiyoda-ku, Tokyo 100-0005, Japan Business focus Manufacture and sale of packing materials, packing containers and distribution equipment

#### Tokyo Zairyo Co., Ltd 🔵 📥 📕

Shin Marunouchi Center Building, 1-6-2 Marunouchi, Chiyoda-ku, Tokyo 100-0005, Japan Business focus Trading

#### Zeon North Co., Ltd.

351 Ejiri, Takaoka-shi, Toyama 939-0062, Japan

Business focus Contracting, design, construction and management for various facilities; sale of industrial materials and equipment; purchase and sale of petrochemical products; Validating environmental measurement, measuring working environment; conducting various analyses

#### Zeon Yamaguchi Co., Ltd.

2-1 Nachi-cho, Shunan-shi, Yamaguchi 745-0023, Japan

Business focus | Purchase and sale of civil engineering materials, packing materials, and various facilities; design and construction, contracting for various plants; environment analysis

#### Zeon F&B Co., Ltd.

Shin Marunouchi Center Building, 1-6-2 Marunouchi, Chiyoda-ku, Tokyo 100-0005, Japan Business focus Agency business for nonlife insurance; loan and allocating business to each group company

#### Zeon Medical Inc. A

Shuwa Shiba Park Building, 2-4-1 Shiba Kohen, Minato-ku, Tokyo 105-0011, Japan Business focus Manufacture and sale of medical equipment

#### Zeon Polymix Inc.

1-11-1 Ishizue, Ohtsu-shi, Shiga 520-2272, Japan

Business focus Manufacture of rubber compounds (CM)

#### RIMTEC Corporation

Shin Marunouchi Center Building, 1-6-2 Marunouchi, Chiyoda-ku, Tokyo 100-0005, Japan

Business focus | Sales of RIM combination liquid and molded items

#### Tohpe Corporation

1-5-11 Chikkoshinmachi, Nishi-ku, Sakai-shi, Osaka 592-8331, Japan Business focus Sales of paints and specialty materials



#### The Americas

#### Zeon Chemicals L.P.

4111 Bells Lane, Louisville, Kentucky 40211, U.S.A. Business focus Manufacture and sale of synthetic rubbers

#### Zeon do Brasil Ltda

Rua Arandu, 57/cj 23, Sao Paulo-SP, Brasil Business focus Sale of synthetic rubbers and resins

#### Europe

#### Zeon Chemicals Europe Ltd.

Sully, Vale of Glamorgan, CF64 5ZE, United Kingdom Business focus Manufacture and sale of synthetic rubbers

#### Zeon Europe GmbH

Hansaallee 249, 40549 Düsseldorf, Germany

Business focus Sale, export, and import of synthetic rubbers and resins

#### Telene S.A.S.

2, rue Marie Curie - 59910 Bondues, France

Business focus Development and distribution of Telene® DCP-RIM resin

#### Asia and Oceania

#### Zeon Trading (Shanghai) Co., Ltd.

Room 1501, Hongwell International Plaza, No.1600 Zhongshan West Road, Xuhui District, Shanghai, 200235, China

Business focus Sale, export, and import of synthetic rubbers and chemicals and related products

#### Shanghai Zeon Co., Ltd.

No.380, Shennan Road, Zinzhuang Industry District, Minhang, Shanghai, 201108,

Business focus Manufacture and sale of rubber compounds (CM)

#### Zeon Polymix (Guangzhou) Co., Ltd.

Jing Quan 1st Road, Yong He Economic Zone, Guangzhou, 511356, China Business focus Manufacture and sale of rubber compounds (CM)

#### Zeon Shinhwa Inc.

504 Diplomatic Center B/D, 1376-1, Seocho-Dong, Seocho-Gu, Seoul, 137-070, Korea Business focus Sale of electronic materials

#### Zeon Asia Pte Ltd.

331 North Bridge Road, #20-01/02, Odeon Towers, Singapore 188720 Business focus Sale, export, and import of synthetic rubbers, synthetic latex and petroleum resins

#### Zeon Chemicals Singapore Pte. Ltd

331 N Bridge Rd, Singapore 188720

Business focus Manufacture of synthetic rubbers

#### Zeon Chemicals (Thailand) Co., Ltd.

3 Soi G-14, Pakorn-Songkhrorad Road, Tambol Huaypong, Amphur Muangrayong, Rayong 21150, Thailand

Business focus Manufacture and sale of petroleum resins

#### ZEON Group (Non consolidated subsidiary)

#### Japan

#### Zeon Chemicals Yonezawa Co., Ltd. A

3-446-13 Hachimanpara, Yonezawa-shi, Yamagata 992-1128, Japan Business focus Manufacture, processing and sale of aromatic chemicals, the middle objects of medicine and agricultural chemicals, and RIM combination liquid

#### Ibaraki Zeon Kasei Co., Ltd.

1175 Kamiizushima, bando-shi, Ibaraki 306-0654, Japan

Business focus Manufacture of processed plastic products (PVC compounds), powdered rubbers and molding products with resin sheet

#### Okayama Butadiene Co., Ltd.

3-1-11 Nihonbashi Honcho, Chuo-ku, Tokyo 103-0023, Japan Business focus Manufacture and sale of butadiene monomer

#### Zis Information Technology Co., Ltd.

Shin Marunouchi Center Building, 1-6-2 Marunouchi, Chiyoda-ku, Tokyo 100-0005, Japan Business focus Consulting about data processing systems; sales and maintenance of computer and office automation equipment

#### Optes Inc.

422-1, Futagamishin, Takaoka-shi, Toyama 933-0073, Japan

Business focus Manufacture of optical film and optical parts; design and manufacture of metallic molding

#### Asia and Oceania

#### Zeon (Shanghai) Co., Ltd.

Room 1502, Hongwell International Plaza, No.1600 Zhongshan West Road, Xuhui District, Shanghai, 200235, China

Business focus Provide assistance to and exercise control over the ZEON Corporation Group companies in China with regard to such functions as accounting, finance, personnel management, legal, etc.

#### Takehara Zeon (Shanghai) Co., Ltd.

No.380, Shennan Road, Zinzhuang Industry District, Minhang, Shanghai, 201108, China Business focus Manufacture and sale of silicon rubber compounds (CM)

#### Suzhou Rui Hong Electronic Chemicals Co., Ltd. 🔺

No.501, Minfeng Road, Economic Development Zone, Wuzhong District, Suzuhou City, Jiangsu, 215124, China

Business focus Manufacture and sale of photoresist

#### Zeon Korea Co., Ltd.

No. 403, 4Fl., City Air Tower 159-9 Samseong-dong Gangnam-gu Seoul, 135-973, Korea Business focus Sales and import of optical materials, electronic materials, synthetic resins, synthetic rubbers

#### Zeon CSC Corporation A

3rd Fl. 266, Sec. 1, Wen Hwa 2 Road, Linkou Dist., New Taipei City 24448, Taiwan, R.O.C. **Business focus** Sale of optical materials

#### Zeon Asia Malaysia Sdn. Bhd.

Unit 208, Block B, Phileo Damansara II, No.15, Jalan16/11, Off Jalan Damansara, 46350 Petaling Jaya, Selangor, Malaysia

Business focus Sales of synthetic latexes

#### Zeon Advanced Polymix Co., Ltd.

591 UBCII BLDG, Office No.2206, 22thFL, Sukhumvit 33rd, Klongton Nua, Wattana, Bangkok 10110 Thailand

Business focus Manufacture and sale of rubber compounds (CM)

#### Zeon Manufacturing Vietnam Co., Ltd.

Land Lot No: IN1-6A and IN1-6B, VSIP Haiphong Township, Industrial and Service Park, Dinh Vu-Cat Hai Economic Zone, Thuy Nguyen District, Haiphong city, Vietnam Business focus Manufacture and sale of packing containers

Overview of our main businesses and product development Processed **Products** Powder Slush Compounds Polyvinyl chloride resins Medical Supplementary artificial heart Latex (paper manufacturing) VP Latex Hollow latex (footwear) (paper manufacturing) Specialty synthetic rubber (NBR & AR for automotive parts) Hydrogenated nitrile rubber (Zetpol®) Polymerized toner Commodity synthetic rubber (SBR & BR for tires) Commodity synthetic rubber with modified terminals C5 petroleum resin Chemicals (roadmarking paints) Isoprene rubber (IR) Thermoplastic elastomer SIS

Specialty

Chemicals

1970 >>> 1980 >>>

1990 >>>

(adhesives)

RIM molded items

and combination liquid

(large-scale plastic products)

**Electronic** Materials

C5 fluorine (electronic materials)



1960 >>>

GPB: ZEON process of butadiene. This is a proprietary ZEON technology used to extract highly pure butadiene from C4



technology used to extract isoprene and other highly pure effective substances from C5 fraction



#### Developed proprietary GPB and GPI technologies that lead the world

(tires)

Synthetic aroma chemicals

(leaf chemicals)

In the petrochemical industry, which also uses crude oil as a raw material, technological capabilities are a key element impacting the competitive strength of a company. ZEON, aiming to secure butadiene, which is the raw material used for producing PVC and synthetic rubber, developed the GPB process in 1965 to efficiently extract high-grade butadiene from C4 fraction. Moreover, in 1971, the company developed the GPI process, to efficiently extract isoprene, the raw material for isoprene rubber (IR), and other useful components, from C5 fraction.

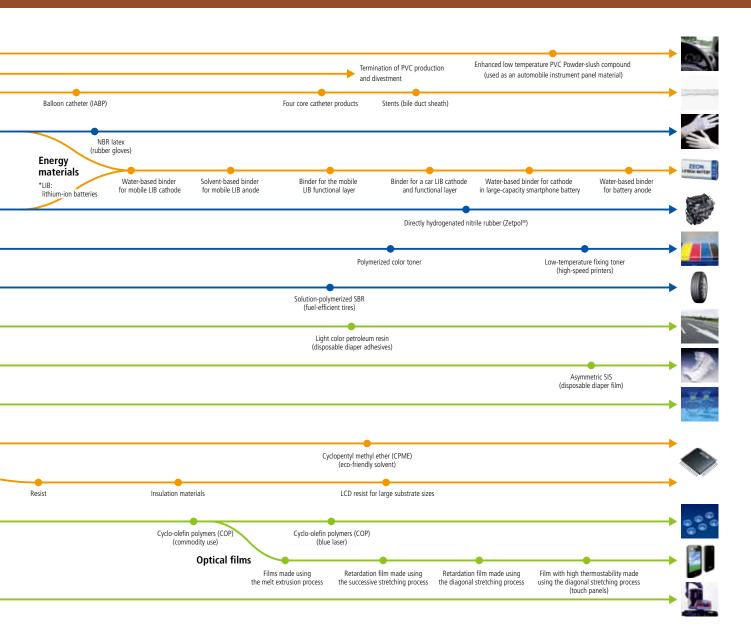
These are proprietary ZEON technologies. The company is exporting its GPB technologies to countries around the world. This contributes substantially to the company's competitive edge and promotes the ZEON name around the world.

#### Launched PVC and synthetic rubber production

Nippon ZEON Co., Ltd. was founded as a PVC manufacturer in 1950, established through capital from three Furukawa group companies-Furukawa Electric Co., Ltd., Yokohama Rubber Co., Ltd., and Nippon Light Metal Co., Ltd. The company acquired its PVC manufacturing technologies from BF Goodrich Chemicals Co. in the United States, which at the time was the global leader in the industry. The PVC business was the company's original business pursuit until its withdrawal from the business in 2000.

Furthermore, in 1959, ZEON acquired technologies from BF Goodrich Chemicals to start up a special synthetic rubber (NBR) plant. This was Japan's first domestic synthetic rubber plant. Following this, the company embarked on the production of styrene-butadiene rubber (SBR). ZEON thus established its synthetic rubber business, which produces synthetic rubber for tires and engine components, and which it continues to manufacture today.

2000 >>> 2010 >>



#### **Developing comprehensive uses for C5 fraction**

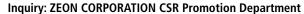
Isoprene rubber, made from raw materials obtained through the GPI process, is a useful material which has the same chemical stability as natural rubber. There are many substances that are derived as a byproduct of this process however the GPI process also has advanced functionality for the separation of these byproducts at a high degree of purity. ZEON has focused on the effective use of these various substances. The process was developed and applied to the production of petroleum resins and thermoplastic elastomer SIS in the 1980s, synthetic aroma chemicals and RIM molded items in the 1990s, and cyclo-olefin polymers in and after 2000. As a result, we have grown to be a business that accounts for a large share of the global market. Moreover, the technologies fostered during this development process are being used in areas other than C5 fraction.

# Rolling out higher-grade materials and establishing top-notch manufacturing technologies

In recent years, there have been calls for sophisticated products which realize energy efficiency in response to environmental problems, and similar expectations are growing for chemical materials. In the synthetic chemical business, ZEON developed a hydrogenated nitrile rubber, Zetpol®. The material achieves both low cost and high functionality and is being used in automobile engine components and other applications with strict requirements. In addition, cyclo-olefin polymers, developed from a comprehensive use of C5 fraction, are high-performance materials used in optical films, such as for LCD panels and lenses, and also as a material for electrical insulating.

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