

ANNUAL REPORT 1998



Vision  
for  
Value



# PROFILE

**T**oagosei Co., Ltd. produces a wide range of chemical products used in a broad spectrum of industries and customer segments. Building on expertise in commodity chemicals such as caustic soda, chlorine and acrylic esters, Toagosei has efficiently deployed its research and development resources to create value-added products in such fields acrylic polymers, adhesives, agriculture and biotechnology. The Company has also concluded strategic mergers and acquisitions to strengthen its acrylic polymer and adhesives businesses. Other growth strategies are focused on reducing operating and manufacturing costs; developing new product applications in high-growth industries; and expanding sales in overseas markets.

## T A B L E O F C O N T E N T S

Financial Highlights .....	1	REVIEW OF OPERATIONS	
Interview with President Fukuzawa.....	2	Caustic Soda & Chlorides .....	10
Vision for Value .....	5	Compressed Gases.....	11
Flexible.....	6	Other Inorganic Chemicals.....	11
Powerful .....	7	Chlorinated Products .....	12
Rational.....	8	Acrylic Products.....	12
Toagosei at a Glance .....	9	Plastics .....	13
		Other Organic Chemicals.....	13
		Board of Directors and Auditors.....	14
		Six-Year Selected Data .....	15
		Management's Discussion and Analysis .....	16
		Financial Statements .....	18
		Corporate Data .....	31

# FINANCIAL HIGHLIGHTS

Toagosei Co., Ltd. Years ended December 31, 1998 and 1997

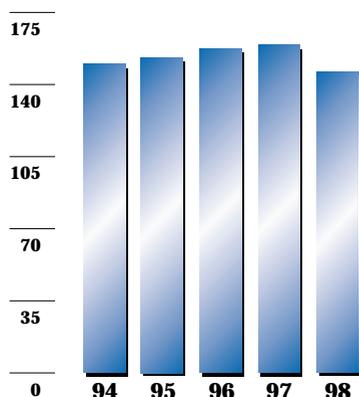
Non-Consolidated Basis	Millions of yen		Thousands of U.S. dollars (Note 1)
	1998	1997	1998
Net sales	¥ 96,933	¥107,647	\$ 837,796
Operating income	1,983	3,780	17,139
Income before income taxes	1,160	2,226	10,026
Net income	740	1,346	6,396
Per share of common stock (in yen and dollars):			
Net income (Note 2)	2.77	4.93	0.024
Cash dividends applicable to the year	6.00	6.00	0.052
Total assets	147,197	137,675	1,272,230
Shareholders' equity	67,365	68,253	582,239
<b>Consolidated Basis</b>			
Net sales	¥145,896	¥159,396	\$1,260,985
Operating income	5,743	8,600	49,637
Income before income taxes and minority interests	2,690	5,790	23,250
Net income	254	1,824	2,195
Per share of common stock (in yen and dollars):			
Net income (Note 2)	0.95	6.67	0.0082
Cash dividends applicable to the year	6.00	6.00	0.0518
Total assets	203,788	190,782	1,761,348
Shareholders' equity	80,664	80,999	697,182

Notes 1: U.S. dollar amounts are translated from yen, for convenience only, at the rate of ¥115.70=\$1.00

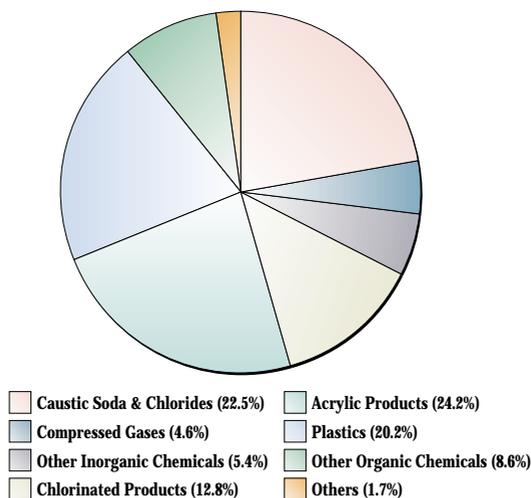
2: Net income per share is computed based on the weighted average number of shares of common stock outstanding during each year.

(Consolidated basis)

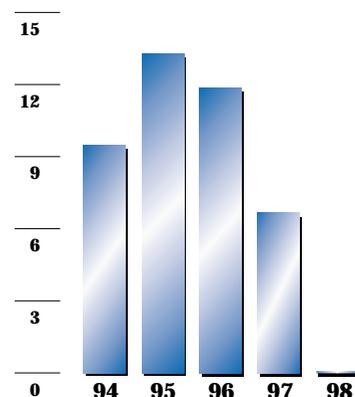
**Net Sales**  
(Billions of yen)



**Net Sales by Product Segment**  
(%)



**Net Income per Share**  
(¥)



## INTERVIEW WITH PRESIDENT FUKUZAWA



*Bunshiro Fukuzawa, President*

### ***In 1998 the business environment worsened and Toagosei's business performance was adversely affected. Could you detail the main factors behind Toagosei's business performance?***

In addition to a slump in domestic demand, a decline in exports to Southeast Asia contributed to further deterioration of the Company's business environment. In accordance with our mid-term management plan, we are strategically selecting areas of strength and building on them. As a part of this process, we are withdrawing from product lines that do not have sufficient profitability. Although consolidated net sales declined 8.5 percent to ¥145.9 billion, half of this decline resulted from our decision to withdraw products from sale. An average 5.5 percent drop in unit prices also contributed to the decrease in sales. Despite lower expenses, operating income declined 33.2 percent to ¥5.7 billion. Toagosei incurred a one-time charge of ¥960 million in connection with losses at D.S.T. Micronics Co., Ltd., which is accounted for by the equity method. Consequently, net income declined 86.1 percent to ¥254 million.

Because of these exceptional factors, our results in the past year were disappointing. On a positive note, however, Toagosei's core businesses weathered the difficult conditions better than many other companies.

### ***Toagosei's mid-term management plan ended in 1998. Please describe the Company's success in attaining the objectives of the plan and any future management issues.***

One of the goals of the plan was to raise the ratio of consolidated to non-consolidated sales and income. In 1998 this ratio was 1.5 times for net sales, 2.9 times for operating income, and 2.4 times for ordinary income. We reduced our break-even point compared to the 1993 peak by ¥11.5 billion, or 12.0 percent, as of December 1998. However, a drop in sales over the same period resulted in a decline in profits.

Our attainment of the objectives in the management plan reflected this performance. The product rationalization process was slow. Even after deciding to withdraw unprofitable product

lines, implementation took too long. The removal of *Vitalon* was a good example.

We misjudged the economic climate from 1996 to 1998 and consequently found it difficult to reach many of the goals stated in the plan. Although we failed to reach our numerical targets, we did succeed in meeting qualitative targets and strengthening our core businesses. For instance, the alliance we formed with Mitsubishi Chemical Corporation enabled us to focus production closer to markets and thus reduce logistics costs. In addition, by establishing our own power-generation facilities, we have reduced our energy costs. In the acrylic business, the Singapore plant began operation and heralded the globalization of our acrylic monomer business. With production bases in the United States and China, the adhesives sector is developing vigorously. In 1998 we acquired the adhesive manufacturer ACI Japan Ltd., renamed Aron Ever-Grip Ltd. The operations of this company have strong synergy with our adhesives business.

The targets in our new mid-term management plan are attainable even with zero economic growth. If the economy turns upward, our break-even point will drop and we can expect healthy growth in profits. In addition, rationalization throughout the Company has made us far more buoyant.

***Could you elaborate on the contents of the new management plan and your strategies to ensure the success of this plan?***

Our new three-year management plan, which started in January 1999, contains three main objectives: Reorganizing our business structure; improving earnings; and raising management efficiency. In 2001, the final year of the plan, we aim to achieve non-consolidated return on equity of 5 percent, consolidated sales of ¥180 billion and ordinary income of ¥10 billion.

To achieve these objectives, we plan to further reorganize our business to focus on core strengths and intensify efforts to improve profitability through more effective use of management resources.

The reorganization of our business structure focuses on:

- Strengthening the key chlorine and alkali, acrylic products, and adhesives businesses and developing international markets for acrylic and adhesives products
- Reducing logistics costs in the chlorine and alkali field by concentrating production of chlorine and alkali operations closer to markets
- Developing new technology and acrylic products and expanding global markets to become number one in Asia for acrylate and global number one in cyanoacrylates

Improving management efficiency focuses on:

- Improving production efficiency by reducing personnel costs and installing an integrated computer system
- Reducing total assets
- Strengthening the Group by selling off or exiting unprofitable businesses

***There has been some concern that the timing of Toagosei's investment in Singapore and Kawasaki Organic Chemical Co., Ltd. was inopportune. Could you provide a long-term perspective of the value of these investments?***

At present, cash flow at the Singapore plant is slightly negative because of the Asian economic slump. However, we expect the plant to produce a range of new products based on solid-grade oligomer (SGO) technology developed jointly with SC Johnson Polymer. This innovative technology offers several major advantages over previous production methods. For instance, it allows polymers to be produced much more quickly and economically. Moreover, because the technology already has a range of existing applications, the business can be launched quickly. We expect the replacement of our present acrylic polymer technology with new technology will allow us to increase annual sales volume of our acrylic polymers from less than 100 tons to tens of thousands of tons.

Because this technology produces polymers much more efficiently, profit margins are higher. As a result, when SGO polymer production begins, we anticipate a quick turnaround in the profitability of the Singapore plant. In addition, the Singapore plant will also produce acrylic acid esters, allowing us to manufacture this material ourselves at a low cost.

The price of PVC in Japan is the lowest in the world. However, rationalization at our Kawasaki plant has greatly improved our cost competitiveness. Kawasaki Organic Chemical is now a low-cost leader. Moreover, the favorable location of the plant provides benefits such as low distribution costs and we are currently seeking ways to reduce costs further.

***Toagosei is aiming to be the top cyanoacrylate adhesive manufacturer in the world. Could you outline Toagosei's current status and your plan to accomplish this target?***

We are the leading cyanoacrylate adhesive manufacturer in Japan, and also enjoy a large market share in the United States. Our drive to become number one worldwide is premised on growth in China and Southeast Asia. Though growth in these areas has slowed in the last few years, we are planning to increase our market share by reinforcing our efforts in market development. We recently acquired an adhesive manufacturer, ACI Japan Ltd., which was renamed Aron Ever-Grip Ltd. upon acquisition. The combined annual adhesive sales of Toagosei and Aron Ever-Grip amount to ¥11.5 billion. We expect a synergistic effect between Toagosei's manufacturing technology and Aron Ever-Grip's strength in developing new applications and new markets. I am confident that combined sales will reach ¥20 billion in 2001. With the strategic measures we have taken, we remain on course to become the top manufacturer in the cyanoacrylate adhesive market.

***What is the status of Toagosei's ISO certification?***

In December 1995 the Nagoya plant received ISO 9002 certification for the production of acrylic acid and acrylic esters. Companywide certification was then achieved, covering the Tokushima, Takaoka and Sakaide plants. All Toagosei plants became ISO 9000 series-certified by November 1998, when the Sakaide plant received ISO 9001 certification for polymer flocculants.

Furthermore, as a part of Toagosei's responsible care activities, the Company is establishing an environmental control system. In December 1998, the Nagoya and Takaoka plants received ISO 14001, followed by the Tokushima and Sakaide plants in February 1999. All Toagosei plants have now attained both ISO 9000 and ISO14000 series certification.

***What message would you like to send investors and shareholders?***

I consider it my duty to ensure we achieve the goals of our mid-term management plan as quickly as possible. We are determined to create an operating structure that is profitable even when the economic growth rate is zero. Activities such as those at the Singapore plant, Kawasaki Organic Chemical, Aron Ever-Grip, and most importantly in new polymer technology are all contributing to increasing our ratio of higher-margin specialty chemical sales to total sales.

Although the environment remains challenging, I believe the sweeping measures we have taken — and continue to take — to strengthen our operations will make Toagosei a solid long-term investment.



Bunshiro Fukuzawa  
President and Representative Director

# VISION FOR VALUE

## **Flexible / Powerful / Rational**

*Toagosei's mid-term management plan is aimed at strengthening our ability to create value for customers and shareholders. Key themes include broadening applications and markets for our products, expanding aggressively in overseas markets, and raising profitability both through rationalization and a focus on higher-margin specialty chemicals.*

# FLEXIBLE

Flexible application of advanced technologies positions Toagosei to develop products that respond to a range of customer needs. The Company's three core businesses — caustic soda and chlorides, acrylics developed from original polymer technology, and adhesives — play an important role in industries as diverse as automobiles, paper and pulp, and civil engineering.

In response to changes in the industrial structure of Japan, Toagosei is restructuring its operations to focus on higher-margin, value-added products. A thrust of this program is identifying and speeding development of products with the best potential for profitability and competitiveness.

Toagosei places strong emphasis on the development of original products, with a focus on pharmaceuticals.

Toagosei will conduct clinical trials of its anticancer agent



*The super-absorbent polymer Aron Zap and the macromolecular flocculant Aron Floc are two products with excellent demand potential. Aron Zap is used primarily in such applications as disposable diapers, while demand for Aron Floc is centered on sewage treatment. As Asian countries modernize, sewage management networks and waste water treatment plants are steadily expanding, which increases demand for Aron Floc. Toagosei has positioned itself to take advantage of this demand by increasing production and sales capabilities.*

that has few side effects, and plans to acquire FDA approval and market the anticancer agent in the United States by 2002. A number of other pharmaceuticals, including antifungal agents, are now in the pipeline and are expected to contribute to sales in the future.

Toagosei's specialty chemicals include *Novaron*, an anti-bacterial agent developed in response to demand following outbreaks of the O-157 strain of *E. coli* and MRSA (Methicillin-Resistant *Staphylococcus aureus*); *Kaligreen*, an environmentally friendly fungicide; and *Cavinon*, an organic hybrid antifungal agent. Both *Novaron*

and *Kaligreen* are products with global demand potential. Toagosei has begun marketing *Kaligreen* in the United States, and plans to introduce it into the markets of Latin America. Similarly, *Novaron* has received FDA and EPA

approval in the United States, and demand at the start of 1999 is projected at 50 tons per year. Toagosei plans to closely follow the move into the United States with expansion into Europe.

In the new business of UV/electron beam cured resins, Toagosei is the first company in Japan to successfully commercialize oxetane (trimethylene oxide). Oxetane is an exciting, environmentally friendly alternative to epoxy resins, and is used in paints, coatings, ink and adhesives.

Cured without solvents and free from endocrine disruptors, oxetane is valuable to industries wishing to automate the bonding, tacking and sealing process. With lower viscosity and easier application than epoxy, it increases production line speed and lowers costs.

Toagosei expects domestic sales of ¥4 billion and overseas sales of ¥6 billion by 2002.



*In response to a need for antimicrobial agents, demand for Novaron is expected to grow. Toagosei is expanding applications for Novaron, particularly in building materials and household appliances, such as refrigerators. In addition, Novaron was recently reevaluated for use with fabrics, with potential applications including clothing worn during surgical operations.*



*Weak economic conditions in 1998 hindered sales of adhesives for such applications as bar codes, but future demand is set to expand. Acrylamide tertiary butylsulfonate (ATBS), a chemical that improves the dye uptake and heat resistance of acrylic fiber, is undergoing increasing sales.*

# POWERFUL

Building on its position as the leading acrylate manufacturer in Japan, Toagosei is making a concerted drive to become the world's number one manufacturer of cyanoacrylate instant adhesives. To achieve this goal, Toagosei is aggressively expanding business in overseas markets, particularly Asia and the United States, and forming strategic acquisitions and tie-ups.

**T**oagosei is building on its strengths through a program of selective and strategic investments. During more than 35 years as a producer of both acrylic monomers and polymers, Toagosei has accumulated a wealth of advanced, original technologies. The start of production at the Singapore plant in 1999 will support the Company's efforts to expand sales in Asia. Already the leading cyanoacrylate manufacturer in

Japan, Toagosei aims to gain the number one share of the world cyanoacrylate instant adhesive market.

Mergers and acquisitions are also playing a role in strengthening Toagosei's market position. In June 1998, Toagosei entered into an agreement with U.S. company SC Johnson Polymer for the licensing and joint development of solid-grade oligomer (SGO) technology. This technology eliminates the use of solvents in the production of acrylic polymers, and offers the twin

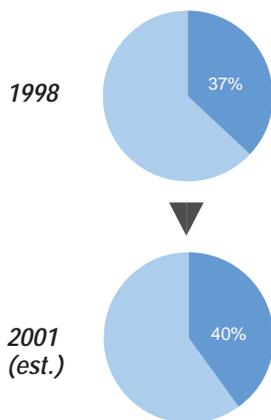
benefits of lowering manufacturing costs and improving environmental safety. It will thus help to bolster Toagosei's competitiveness in the acrylic business. In the adhesives business, Toagosei acquired ACI Japan from BTR Ltd. of the U.K. Renamed Aron Ever-Grip Ltd., this new subsidiary will handle sales of industrial adhesives for

building materials, automobiles and information equipment.

To maximize its strength in the instant adhesive industry, Toagosei has begun a concerted push to develop and expand in overseas markets. At the filling plant in Zhuhai, China, a new production line is being built for a gelatinous form of instant adhesive, a product with broad applications in Asian markets. This move will increase production capacity in China by 30 to 40 percent. In the United States, the addition of two new product lines, the *Advanced Formula* series, aimed at large-volume retailers such as home centers, and the *Craft* series, aimed at the hobbycraft market, will support expansion of the adhesive market.



*The mid-term management plan aims for Toagosei to strengthen its operations to become the top cyanoacrylate adhesives manufacturer in the world. Another objective of this plan is the development of the non-solvent acrylic polymer business. The acquisition of ACI Japan and the tie-up with SC Johnson Polymer will accelerate achievement of these goals.*



*Toagosei plans to achieve a ratio of higher-margin specialty chemical sales to total sales of 40 percent by 2001. Furthermore, the Company plans sales of these specialty chemicals to reach between ¥15 billion and ¥20 billion by 2005. Of this total, ¥5 billion should come from adhesives and ¥5 billion from acrylic products.*



*In the field of industrial adhesives, sales are increasing for environmentally safe products such as PES-1000, a water soluble polyester that reduces the need for solvents. Toagosei is focusing on expanding applications in the automobile and electronics industries.*

# RATIONAL

Key Toagosei objectives are using capital efficiently with an emphasis on strengthening cash flow and improving profitability through streamlined operations. Backed by a sound financial position, Toagosei raises funds at low cost and deploys them effectively.

In the PVC business, an extremely competitive segment in Japan, Toagosei is closing or integrating inefficient facilities to raise productivity and is planning to export excess capacity to China and other markets. Furthermore, through a reduction in logistics costs and the concentration of caustic soda operations close to major markets, Toagosei has improved profitability.

To enhance productivity per employee, Toagosei continues to reduce staff, and is working toward achievement of the mid-term management plan. This plan maps out efficiency improvements and strengthens cost consciousness among employees. As a result, in 1998 fixed costs were reduced by 4.1 percent.



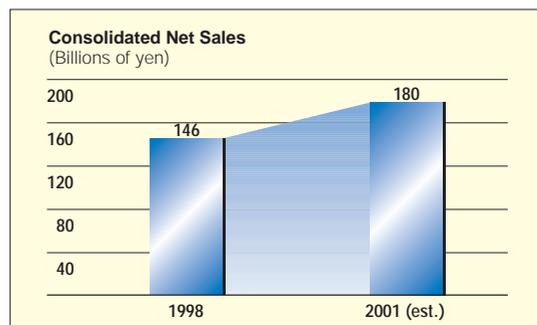
*The mid-term management plan targets consolidated sales of ¥180 billion and ordinary income of ¥10 billion. To achieve this, Toagosei has implemented a management system in which employees set their own objectives and then manage their own progress toward them. This system reflects a commitment to improved personnel management and greater employee motivation.*

Toagosei's financial management includes specific criteria for each investment such as profitability and rate of return. For instance, the Company is keeping capital expenditures within the scope of depreciation expenses, and rationalization investments are to be recovered within half the depreciation period. Furthermore, the Company will reduce total assets through such measures as reducing inventory, writing off poorly performing assets and implementing speedier collection of accounts receivable. With a high equity ratio of 39.6 percent, Toagosei continues to maintain a sound financial position.



*Manufacturing high-quality products helps Toagosei maintain a competitive edge and is essential to improve profitability. In accordance with this commitment to quality, all Toagosei's plants have acquired ISO 9000 and ISO 14000 series certification.*

The recent crisis in the Japanese financial system has raised the problem of liquidity risk for some companies. However, Toagosei's sound financial foundation achieved through efficient financial management allows it to procure funds at relatively low cost. To increase consolidated sales and earnings to twice non-consolidated levels, the Company is making efforts to strengthen the management base of each member of its group. Each of Toagosei's subsidiaries is managing its finances in order to raise funds at the same cost as the parent company.





# T O A G O S E I   A T   A   G L A N C E

PRODUCTS	MARKETS	STRATEGIC FOCUS
<b>CAUSTIC SODA &amp; CHLORIDES</b>		
Caustic soda, liquid chlorine, hydrochloric acid, sodium hypochlorite, caustic potash, sodium sulfate, ferric chloride, potassium pyrophosphate, sodium pyrophosphate, copper pyrophosphate	Chemical fibers, dyestuffs, pharmaceuticals, soaps and cleaners, photography, paper, metallurgy, foodstuffs, water purification, petrochemicals	<ul style="list-style-type: none"> <li>• Increase productivity for specialty chemicals</li> <li>• Develop demand in broad range of industries</li> </ul>
<b>COMPRESSED GASES</b>		
Oxygen, nitrogen, argon, carbon dioxide, hydrogen, disilane, liquid petroleum gas, sterilizing gas, dry ice	Steel, chemicals, semiconductors, office equipment, foodstuffs, soft drinks	<ul style="list-style-type: none"> <li>• Develop applications in growth industries</li> </ul>
<b>OTHER INORGANIC CHEMICALS</b>		
Ammonium sulfate, sulfuric acid, potassium bicarbonate, foliar spray fertilizer, fungicides	Fertilizer, metallurgy, synthetic fibers, health care, waterproofing, pharmaceuticals	<ul style="list-style-type: none"> <li>• Strengthen development and marketing of products with high added value</li> <li>• Expand sales in overseas markets</li> </ul>
<b>CHLORINATED PRODUCTS</b>		
Trichloroethylene, perchloroethylene, methylene chloride, vinylidene chloride monomer, cyclohexanone, cyclohexanol, methyl-ethyl-ketoxime, ethylene carbonate, methallyl chloride	Semiconductors, plastics, machinery, dry cleaning, fibers, agrochemicals, ink, paint, solvents	<ul style="list-style-type: none"> <li>• Increase production capacity</li> <li>• Raise earnings by reducing material and distribution costs and personnel expenses</li> </ul>
<b>ACRYLIC PRODUCTS</b>		
Acrylic esters, acrylic acid, acrylic polymers, acrylic polymer products, oligoester-acrylates, polymer flocculants, waterproofing materials, coating powder	Clothing, footwear, paper, water purification, detergent, paint, ink, adhesives, semiconductors, waterproof roof paint	<ul style="list-style-type: none"> <li>• Reinforce strong production and marketing system</li> <li>• Strengthen overseas market development</li> </ul>
<b>PLASTICS</b>		
Plumbing products, cable conduits, thermoplastic elastomers, polyethylene products, automobile mats, household goods	Plumbing, public utilities, construction, consumer goods, health care, automotive, environmental protection	<ul style="list-style-type: none"> <li>• Develop products and innovative technologies tailored to market needs</li> </ul>
<b>OTHER ORGANIC CHEMICALS</b>		
Alpha-cyanoacrylates, anaerobic adhesives, heat-resistant inorganic adhesives, PP, PE and PT adhesives, anticorrosive coatings, inorganic ion exchangers, silicon hydride waterproofing, silver inorganic antimicrobial agents	Household and industrial adhesives, genetic engineering	<ul style="list-style-type: none"> <li>• Expand presence in international markets by strengthening sales in the U.S., Europe and Asia</li> </ul>

# REVIEW OF OPERATIONS

## CAUSTIC SODA & CHLORIDES

Both the volume of sales and revenue for caustic soda dropped significantly due to lower product prices that resulted from decreasing demand and increasing competition. In the inorganic chloride sector, shipments of hydrochloric acid proceeded favorably but shipments of liquid chlorine, liquid iron perchlorate and sodium hypochlorite slowed. Overall sales revenue decreased due to a fall in prices. This had

a dramatic influence on profits. Overall consolidated net sales of caustic soda and chlorides decreased 7.7 percent year-on-year to ¥32.8 billion.

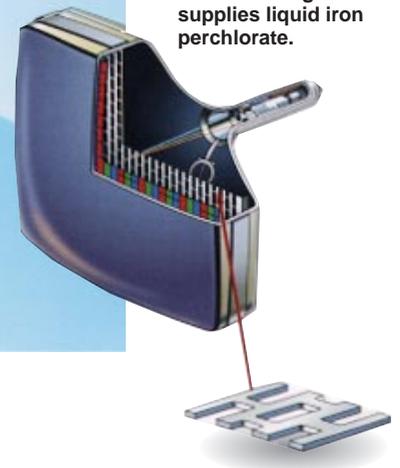
Caustic soda and chlorides, a core business for Toagosei, are important raw materials used in such industries as pulp and paper, pharmaceuticals and chemical fibers. Toagosei produces caustic soda using the most advanced technology in Japan.

However, to weather the poor economic conditions, the Company is taking measures to improve profitability further. These measures include concentrated marketing on areas close to its manufacturing operations such as Shikoku and the Nagoya region. To reduce electrolysis costs at the Nagoya plant, the Company completed a cogeneration system to meet its own electrical demands.

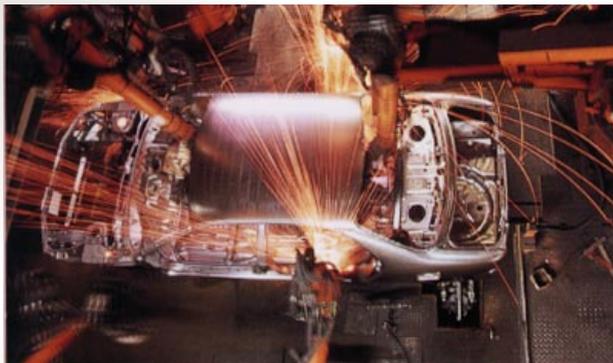
Caustic soda is used to make many products such as paper. The basic chemicals sodium and chlorine are produced through electrolysis of salt water. At the Nagoya plant, Toagosei has invested in electrical generation equipment to reduce manufacturing costs.



The shadow masks manufactured at D.S.T. Micronics Co., Ltd. are used for computer and television displays. D.S.T. Micronics is one of the companies to which Toagosei supplies liquid iron perchlorate.



## COMPRESSED GASES



In cooperation with its Advanced Materials Research Laboratory, Toagosei is developing markets for highly functional specialty gases.

The main customers for Toagosei's compressed gases are the automobile and steel industries. Demand from these large-scale consumers of compressed gases has dropped and consequently our shipments of liquid nitrogen and liquid oxygen also declined. Sales for compressed gases totaled ¥6.8 billion in 1998, a decrease of ¥744 million, or 9.9 percent, compared with 1997.

In addition to further streamlining production, Toagosei is working to build compressed gas earnings by expanding into high-value-added fields. For high-purity chlorine, the two main uses are semiconductors and fiber optics. In the future, the Company plans to develop new applications in high-growth segments of the economy such as communications, electronics and health care.

## OTHER INORGANIC CHEMICALS



*Kaligreen* has received approval in 10 states in the U.S. An expansion of sales of *Kaligreen* for use on hops is under way on the East Coast and will complement sales on the West Coast, where it is widely used on grapes.



Sales of other inorganic chemicals decreased 12.4 percent in 1998 to ¥7.9 billion. Overseas sales of ammonium sulfate fared well but domestic sales reflected the serious economic malaise in Japan. Consequently, shipments and prices fell, resulting in an overall decrease in sales. Furthermore, Toagosei withdrew *Vitalon* from the market. This represented revenue of about ¥800 million, a significant factor in the drop in sales.

Looking to the future, high-value-added products are expected to drive growth in this sector. Building on its original technologies,

Toagosei is developing innovative specialty chemicals such as fungicides that offer greater functionality than competing products. An example is *Kaligreen*, which provides excellent protection against powdery mildew, a problem for grapes and hops, and is safe for people and the environment. A key advantage of *Kaligreen* is that its active ingredient, potassium bicarbonate, also acts as a fertilizer and thereby contributes to plant growth. Demand for *Kaligreen* is projected at 200 tons for 1999, primarily in the United States and Latin America. We expect to increase sales to 2,000 tons by the year 2000.

## CHLORINATED PRODUCTS



A new production facility was completed at Kawasaki Organic Chemical Co., Ltd. in 1998 and is running at 80 percent capacity. As the utilization rate increases, use of the old equipment can be reduced, delivering greater production efficiency.



Toagosei's highly versatile chlorinated products are used in such applications as computers, office equipment, automobile parts and videotape casing. In 1998, demand fell dramatically for these products and revenue in this sector decreased.

Chlorinated product sales decreased 9.5 percent year-on-year to ¥18.6 billion. Exports of PVC-related products to China increased, but weak demand in Japan led to a drop in sales.

Demand for chlorinated organic solvents used in cleaning decreased, resulting in a corresponding drop in the shipments of raw materials.

To restore the profitability of PVC operations, Toagosei expanded PVC production capacity at subsidiary

Kawasaki Organic Chemical Co., Ltd. by 100,000 tons per year. The Company is improving its profit structure by diversifying its supply of raw materials including the import of vinyl chloride from Korea; concentrating production capability and improving productivity; and entering into a cooperative production agreement with Mitsubishi Chemical Corporation.

Toagosei has formed an agreement to entrust the production of vinyl chloride compounds to other companies from 1999. This will free Toagosei to devote itself to sales and is thus expected to contribute to improved profitability in 1999.

## ACRYLIC PRODUCTS



Since beginning production of acrylic esters in Japan in 1960, Toagosei has maintained a leading position in the market for acrylic products.

Toagosei's acrylic esters and acrylic acids for the Japanese market have a variety of uses such as paints, adhesives, and water-absorbent resins.

However, sales in Japan decreased markedly in 1998. This was due to a drop in product prices resulting from weaker demand and intensified competition. Overseas demand, by contrast, was very robust in Europe and

the United States, and increased in China and India. In the acrylic polymer sector, shipments of acrylic oligo-polymers and polymer flocculants were healthy. However, shipments of water-resistant coatings and other acrylic polymers for the construction industry fell and total sales for 1998 decreased to ¥35.2 billion.

To maintain its position as a leading-edge company, Toagosei develops innovative new products incorporating acrylic technology. Representative of these advanced products are acrylic oligomers used in coatings for electronic products, adhesives and super-absorbent polymers. Furthermore, to raise the ratio of specialty chemical sales to 40 percent to increase profit, Toagosei has

entered into cooperative development arrangements with other companies. A new product expected to make a significant contribution to future specialty chemical sales is oxetane. An environmentally friendly alternative to epoxy resins, oxetane eliminates concerns associated with solvents and endocrine disruptors.

Expansion in overseas markets will be a key to future business development. Two plants for the production of acrylic acid and acrylic ester began operation in Singapore in March 1998. These plants are supporting Toagosei's efforts to increase sales of acrylic products in China and the ASEAN nations, and will boost price competitiveness in other markets.

## PLASTICS



Aron Kasei Co., Ltd. manufactures products to meet the needs of senior citizens, a rapidly growing consumer segment in Japan, and already has a high market share in this sector.

Although shipments of drainage piping increased, total sales suffered a year-on-year decline due to lower shipments for housing and equipment and a fall in prices. In the household products sector, sales of containers for separating rubbish were favorable. However, sales of goods and sundries including mats for use in automobiles, slumped significantly.

Overall sales of plastics fell to ¥29.4 billion, a year-on-year decrease of 8.8 percent.

Consolidated subsidiary Aron Kasei Co., Ltd., which is listed on the second sections of the Tokyo and

Osaka stock exchanges, handles most of Toagosei's plastic manufacturing operations. PVC drainage piping, electrical conduits, and household items are the primary products. Customer segments include industrial and individual consumers as well as the health care industry and public utilities. Aron Kasei also meets the needs of senior citizens with a variety of products that enhance safety and convenience, such as hand rails and shower safety chairs. The development of new, innovative products is expected to drive future growth.

## OTHER ORGANIC CHEMICALS



Toagosei supplies over 1,000 varieties of adhesives designed to satisfy specific user needs.

Despite healthy shipments of adhesives for the U.S. market, demand in Japan for both general and industrial adhesives was poor and consequently sales decreased. Sales of silver antimicrobial agents also dropped because of weak demand. The result was a decrease in total sales for this sector of 8.7 percent to ¥12.6 billion.

Toagosei is a leading supplier of instant adhesives, the main product of the other organic chemicals sector. In Japan the new adhesive product line *Aron Alpha Z* for plastic and rubber was launched in 1998. This line was evaluated highly for such

applications as wrapping materials and the interior components for automobiles. Toagosei is developing markets worldwide for instant adhesives under such brand names as *Aron Alpha* in Japan and Asia, *Krazy Glue* in North America and *Cyanolit* in Europe. In 1998, the Company added two new product lines in the United States and these have gained a considerable market share. With Toagosei's purchase of industrial adhesive manufacturer ACI Japan, the Company plans to expand its industrial adhesives business in Japan and overseas.

# BOARD OF DIRECTORS AND AUDITORS



Seated, left to right: **Sakou Suzuki, Bunshiro Fukuzawa and Torao Nishimura**  
Standing, left to right: **Kunio Nakamura, Sadahiko Ando, Kimitoshi Azuma and Shigeyuki Yamamura**

---

## **President**

Bunshiro Fukuzawa\*

## **Vice President**

Sakou Suzuki\*

## **Senior Managing Director**

Torao Nishimura\*

## **Managing Directors**

Kunio Nakamura  
Sadahiko Ando  
Kimitoshi Azuma  
Shigeyuki Yamamura

## **Directors**

Motoyuki Kitajima  
Manabu Terao  
Shigeaki Fuseya  
Takeo Nakajima  
Akihiko Yamadera  
Yasushi Funaki  
Akio Arisawa  
Toyohiko Kitano

## **Auditors**

Isao Soematsu  
Makoto Fujishima  
Hiroshi Fujii  
Takeyoshi Ono

*\*Representative Director*

(As of March 30, 1999)

# SIX-YEAR SELECTED DATA

Toagosei Co., Ltd. Years ended December 31

Non-Consolidated Basis	Millions of yen					
	1998	1997	1996	1995	1994	1993
<b>For the fiscal year:</b>						
Net sales	¥ 96,933	¥107,647	¥105,143	¥105,892	¥105,464	¥110,377
Income before income taxes	1,160	2,226	5,045	10,748	4,650	4,087
Net income	740	1,346	2,760	4,778	2,790	2,422
<b>Per-share data:</b>						
Per share of common stock:						
Net income	2.77	4.93	10.17	18.65	11.35	9.88
Cash dividends applicable to the year	6.00	6.00	6.00	6.00	7.00	6.00
<b>At year-end:</b>						
Total assets	147,197	137,675	136,407	147,808	134,602	138,836
Shareholders' equity	67,365	68,253	73,614	60,530	57,560	56,295
Number of employees	1,612	1,647	1,705	1,782	1,820	1,820
<b>Consolidated Basis</b>						
<b>For the fiscal year:</b>						
Net sales	¥145,896	¥159,396	¥157,666	¥153,124	¥149,907	¥152,736
Income before income taxes and minority interests	2,690	5,790	9,230	12,927	7,482	7,455
Net income	254	1,824	3,220	3,399	2,330	3,326
<b>Per-share data:</b>						
Per share of common stock:						
Net income	0.95	6.67	11.87	13.27	9.48	13.57
Cash dividends applicable to the year	6.00	6.00	6.00	6.00	7.00	6.00
<b>At year-end:</b>						
Total assets	203,788	190,782	188,248	198,869	177,729	179,914
Shareholders' equity	80,664	80,999	85,857	72,274	67,538	66,778
Number of employees	3,387	3,050	3,164	3,206	3,090	3,057

Note: Net income per share is computed based on the weighted average number of shares of common stock outstanding during each year.

# MANAGEMENT'S DISCUSSION AND ANALYSIS

## Non-Consolidated Income Analysis

Net sales for the year ended December 31, 1998 decreased 10.0 percent to ¥96.9 billion. This decrease reflected in part Toagosei's decision to end sales of the deoxidant *Vitalon*. However, the ratio of higher-margin specialty chemical sales to total sales increased to 36 percent, close to the stated target of 40 percent. The Company continued to cut costs and raise efficiency, yet these favorable factors were offset by lower prices. Cost of sales fell ¥8.0 billion, lowering the Company's break-even point to ¥86.4 billion, the same level as eight years ago. Gross profit was down from ¥25.9 billion in 1997 to ¥23.2 billion in 1998 and the gross profit margin was 24.0 percent. Operating income fell 47.5 percent to ¥2.0 billion and the operating margin decreased from 3.5 percent to 2.0 percent.

Unrealized loss on securities totaling ¥1.2 billion resulted in net other expenses of ¥823 million, compared with ¥1.6 billion in the previous year. Income before income taxes decreased 47.9 percent to ¥1.2 billion. Net income for the period was down 45.0 percent year on year to ¥740 million and net income per share was ¥2.77. Cash dividends remained stable at ¥6.00 per share.

## Non-Consolidated Liquidity and Capital Resources

Decreases in notes and accounts receivables were the principal factors in the 1.6 percent decrease in current assets to ¥64.7 billion as of the end of 1998. Current liabilities decreased to ¥37.5 billion mainly due to an ¥18.6 billion redemption of convertible bonds in December 1998. Toagosei also received ¥3 billion from the issuance of commercial paper. As a result, the current ratio increased from 1.17 times to 1.72 times. Decreased receivables and a marginal increase in depreciation resulted in a 1.4 percent increase in net cash provided by operating activities to ¥7.2 billion.

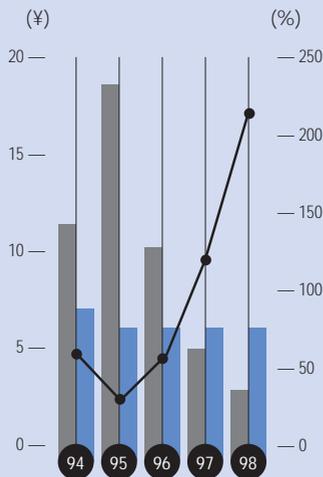
Investing activities used net cash of ¥18.0 billion in 1998. Included in this figure is an ¥8.2 billion capital investment for the purchase of property adjacent to the Nagoya plant and ACI Japan Ltd. (now Aron Ever-Grip Ltd.). Plant and equipment investment was mainly used to reinforce manufacturing infrastructure. Investment in affiliate companies was carried out to strengthen the competitiveness of the Company's industrial adhesives business.

Net cash provided by financing activities was ¥11.9 billion. Toagosei raised ¥23.0 billion in cash by issuing

**Net Income per Share, Cash Dividends per Share and Payout Ratio**  
(Yen; %)

■ Net Income per Share  
■ Cash Dividends per Share  
— Payout Ratio

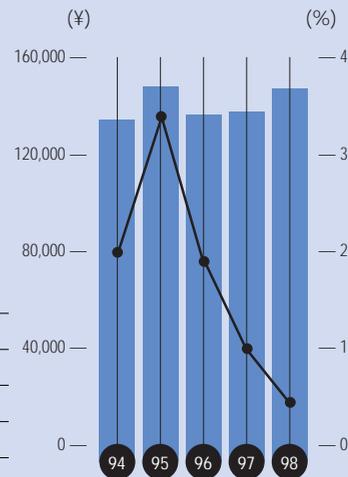
	Net Income per Share	Dividends per Share	Payout Ratio
<b>94</b>	11.35	7.00	61.7%
<b>95</b>	18.65	6.00	32.2%
<b>96</b>	10.17	6.00	59.0%
<b>97</b>	4.93	6.00	121.7%
<b>98</b>	2.77	6.00	216.6%



**Total Assets & ROA**  
(Millions of Yen; %)

■ Total Assets  
— ROA

	Total Assets	ROA
<b>94</b>	134,602	2.0%
<b>95</b>	147,808	3.4%
<b>96</b>	136,407	1.9%
<b>97</b>	137,675	1.0%
<b>98</b>	147,197	0.5%



Note: Figures in graphs are non-consolidated.

bonds and commercial paper. However, the Company used ¥18.6 billion for the redemption of bonds. As a result, cash at the end of the year increased 40.8 percent to ¥3.8 billion.

### Non-Consolidated Financial Position

Total assets increased 6.9 percent to ¥147.2 billion, primarily because of increases in property, plant and equipment and gains in shares of subsidiaries. Return on assets was 0.5 percent, compared to 1.0 percent for 1997, reflecting lower net income. Long term liabilities increased to ¥42.3 billion compared to ¥13.4 billion in 1997 due to a bond issue totaling ¥20 billion.

Shareholders' equity declined 1.3 percent to ¥67.4 billion as Toagosei drew on retained earnings to pay dividends. Return on equity was 1.1 percent. The debt-to-equity ratio, the sum of current liabilities and long term debt divided by shareholders' equity, was 1.17 times compared to 1.0 times a year earlier.

### The Year 2000 Problem

Toagosei is working to solve the Y2K problem and expects to complete all remediation measures by September 1999. The expense of this project in 1998 was

¥120 million and an additional ¥30 million is budgeted for 1999.

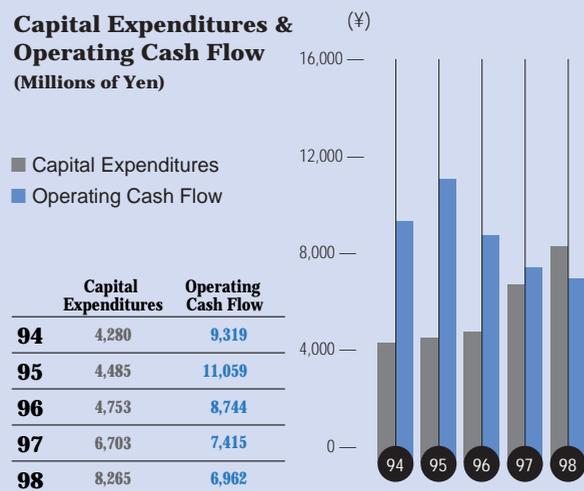
### Consolidated Income Analysis

Consolidated net sales decreased 8.5 percent to ¥145.9 billion. The main cause for this was a drop in sales volume that occurred along with reduced demand. As a result, gross profit decreased 4.9 percent year-on-year to ¥40.4 billion, but the gross profit margin increased 1.1 percentage points to 27.7 percent. Selling, general and administrative expenses increased 2.2 percent, and operating income decreased 33.2 percent to ¥5.7 billion. The operating margin was 3.9 percent.

Net other expenses increased to ¥3.1 billion. This was primarily due to investment losses stemming from valuation losses on securities and a loss posted by D.S.T. Micronics Co., Ltd., a subsidiary accounted for by the equity method. As a result, consolidated net income decreased 86.1 percent to ¥254 million.

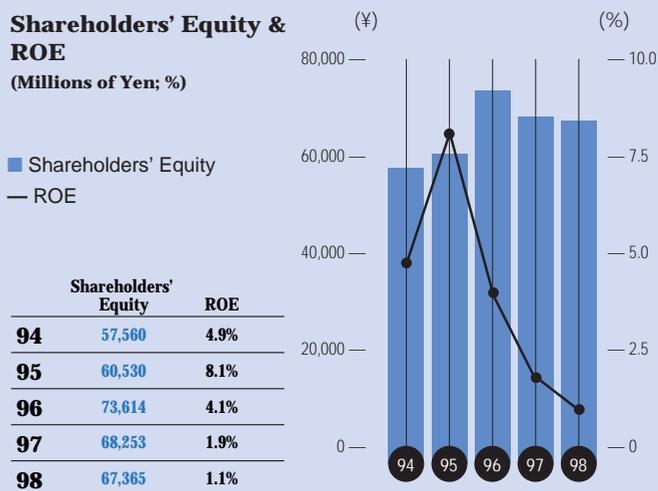
### Capital Expenditures & Operating Cash Flow

(Millions of Yen)



### Shareholders' Equity & ROE

(Millions of Yen; %)



# NON-CONSOLIDATED BALANCE SHEETS

Toagosei Co., Ltd. December 31, 1998 and 1997

Assets	Millions of yen		Thousands of U.S. dollars (Note 2)
	1998	1997	1998
<b>Current assets</b>			
Cash	¥ 3,812	¥ 2,708	\$ 32,947
Time deposits and short-term investments	1,096	1,432	9,473
Marketable securities (Notes 3 and 5)	11,186	12,471	96,681
Receivables:			
Notes and accounts receivable:			
Subsidiaries and affiliates	4,346	5,562	37,563
Trade	27,646	29,256	238,945
Advances to and loans and other receivables from subsidiaries and affiliates	6,608	5,530	57,113
	38,600	40,348	333,621
Allowance for doubtful receivables	(316)	(333)	(2,731)
	38,284	40,015	330,890
Inventories (Note 4)	8,851	8,478	76,500
Other current assets	1,435	618	12,403
<b>Total current assets</b>	<b>64,664</b>	<b>65,722</b>	<b>558,894</b>
<b>Property, plant and equipment</b> (Notes 5 and 8)			
Land	13,742	10,139	118,773
Buildings and structures	38,118	37,130	329,455
Machinery and equipment	95,285	92,459	823,552
Construction in progress	1,542	2,161	13,328
	148,687	141,889	1,285,108
Accumulated depreciation	(93,671)	(89,305)	(809,602)
	55,016	52,584	475,506
<b>Investments and other assets</b>			
Investments in and advances to subsidiaries and affiliates (Note 3)	21,676	13,978	187,346
Investments in securities (Notes 3 and 5)	1,544	1,634	13,345
Other assets	4,297	3,757	37,139
	27,517	19,369	237,830
<b>Total</b>	<b>¥147,197</b>	<b>¥137,675</b>	<b>\$1,272,230</b>

See accompanying notes to non-consolidated financial statements.

<b>Liabilities and Shareholders' Equity</b>	Millions of yen		Thousands of U.S. dollars (Note 2)
	<b>1998</b>	1997	<b>1998</b>
<b>Current liabilities</b>			
Short-term bank loans (Note 5)	¥ 4,363	¥ 4,163	\$ 37,710
Current portion of long-term debt (Note 5)	1,019	19,449	8,807
Commercial paper	12,000	9,000	103,716
Payables:			
Subsidiaries and affiliates	2,483	3,620	21,461
Trade	10,328	12,247	89,265
Notes payable for acquisition of property, plant and equipment	1,005	1,403	8,686
Other	4,446	4,488	38,427
	18,262	21,758	157,839
Accrued expenses	1,320	1,200	11,409
Accrued income taxes (Note 9)	14	74	121
Other current liabilities	532	331	4,598
<b>Total current liabilities</b>	<b>37,510</b>	<b>55,975</b>	<b>324,200</b>
<b>Long-term liabilities</b>			
Long-term debt (Note 5)	41,347	12,374	357,364
Retirement allowances (Note 10)	415	317	3,587
Other long-term liabilities	560	756	4,840
	42,322	13,447	365,791
<b>Shareholders' equity</b> (Notes 6 and 14)			
Common stock, ¥50 par value:			
Authorized — 467,650,000 shares			
Issued:			
1998 — 267,129,768 shares	20,886	—	180,519
1997 — 267,129,768 shares	—	20,886	—
Capital surplus	15,623	15,623	135,030
Legal reserve	3,570	3,402	30,856
Retained earnings	27,286	28,342	235,834
	67,365	68,253	582,239
<b>Contingent liabilities</b> (Note 12)			
<b>Total</b>	<b>¥147,197</b>	<b>¥137,675</b>	<b>\$1,272,230</b>



# NON-CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

Toagosei Co., Ltd. Years ended December 31, 1998 and 1997

	Thousands of common shares	Millions of yen			
		Common stock	Capital surplus	Legal reserve	Retained earnings
<b>Balance at December 31, 1996</b>	279,480	¥20,886	¥15,623	¥3,224	¥33,881
Net income	—	—	—	—	1,346
Cash dividends	—	—	—	—	(1,657)
Transfer to legal reserve	—	—	—	178	(178)
Directors' bonuses	—	—	—	—	(50)
Redemption and retirement of treasury stock	(12,350)	—	—	—	(5,000)
<b>Balance at December 31, 1997</b>	267,130	20,886	15,623	3,402	28,342
Net income	—	—	—	—	740
Cash dividends	—	—	—	—	(1,603)
Transfer to legal reserve	—	—	—	168	(168)
Directors' bonuses	—	—	—	—	(25)
<b>Balance at December 31, 1998</b>	267,130	¥20,886	¥15,623	¥3,570	¥27,286

	Thousands of U.S. dollars (Note 2)			
	Common stock	Capital surplus	Legal reserve	Retained earnings
<b>Balance at December 31, 1997</b>	\$180,519	\$135,030	\$29,404	\$244,961
Net income	—	—	—	6,396
Cash dividends	—	—	—	(13,855)
Transfer to legal reserve	—	—	1,452	(1,452)
Directors' bonuses	—	—	—	(216)
<b>Balance at December 31, 1998</b>	\$180,519	\$135,030	\$30,856	\$235,834

See accompanying notes to non-consolidated financial statements.

# NON-CONSOLIDATED STATEMENTS OF CASH FLOWS

Toagosei Co., Ltd. Years ended December 31, 1998 and 1997

	Millions of yen		Thousands of U.S. dollars (Note 2)
	1998	1997	1998
<b>Operating activities</b>			
Net income	¥ 740	¥ 1,346	\$ 6,396
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	6,222	6,069	53,777
Gain on sales of marketable securities	(435)	(579)	(3,760)
Unrealized loss on securities	1,170	1,971	10,112
Gain on sales and disposal of property, plant and equipment	(312)	(78)	(2,696)
Provision for (reversal of) retirement allowances	98	(153)	847
Other	(4)	2	(35)
Changes in operating assets and liabilities:			
Receivables	2,780	(119)	24,028
Inventories	(373)	(791)	(3,224)
Other current assets	(817)	(122)	(7,061)
Payables, other than notes payable for acquisition of property, plant and equipment, and accrued expenses	(2,051)	1,028	(17,727)
Accrued income taxes	(60)	(1,556)	(518)
Other current liabilities	201	42	1,737
<b>Net cash provided by operating activities</b>	<b>7,159</b>	<b>7,060</b>	<b>61,876</b>
<b>Investing activities</b>			
Decrease in time deposits and short-term investments	336	754	2,904
Decrease in marketable securities	673	1,787	5,817
Purchases of property, plant and equipment	(9,713)	(6,048)	(83,950)
Proceeds from sales and disposal of property, plant and equipment	787	243	6,802
Increase in investments in and advances to subsidiaries and affiliates	(8,732)	(3,329)	(75,471)
Increase in investments in securities	(33)	(182)	(285)
Increase in other assets	(1,281)	(651)	(11,072)
<b>Net cash used in by investing activities</b>	<b>(17,963)</b>	<b>(7,426)</b>	<b>(155,255)</b>
<b>Financing activities</b>			
Increase (decrease) in short-term bank loans	200	(362)	1,729
Proceeds from issuance of commercial paper	3,000	9,000	25,929
Proceeds from issuance of bonds	20,000	—	172,861
Redemption of bonds	(18,592)	(536)	(160,692)
Proceeds from long-term loans	9,987	479	86,318
Repayment of long-term loans	(864)	(2,027)	(7,468)
Cash dividends and directors' bonuses	(1,627)	(1,708)	(14,062)
Redemption of treasury stock	—	(5,000)	—
(Decrease) increase in other long-term liabilities	(196)	36	(1,694)
<b>Net cash provided by (used in) financing activities</b>	<b>11,908</b>	<b>(118)</b>	<b>102,921</b>
<b>Net increase (decrease) in cash</b>	<b>1,104</b>	<b>(484)</b>	<b>9,542</b>
<b>Cash at beginning of the year</b>	<b>2,708</b>	<b>3,192</b>	<b>23,405</b>
<b>Cash at end of the year</b>	<b>¥ 3,812</b>	<b>¥ 2,708</b>	<b>\$ 32,947</b>
<b>Supplemental disclosures of cash flow information:</b>			
Cash paid during the year for:			
Interest	¥ 857	¥ 898	\$ 7,407
Income taxes	521	2,435	4,503

See accompanying notes to non-consolidated financial statements.

# NOTES TO NON-CONSOLIDATED FINANCIAL STATEMENTS

Toagosei Co., Ltd. December 31, 1998

## 1. Summary of Significant Accounting Policies

### Basis of Preparation:

Toagosei Co., Ltd. (the "Company") maintains its accounting records and prepares its financial statements in accordance with accounting principles and practices generally accepted in Japan. The accompanying non-consolidated financial statements have been compiled from the financial statements prepared by the Company as required by the Securities and Exchange Law of Japan and include certain additional financial information for the convenience of readers outside Japan. The accompanying non-consolidated statements of cash flows have been prepared for the purpose of inclusion in these financial statements, although such statements are not customarily prepared in Japan.

### Inventories:

Inventories are stated at cost determined by the average method.

### Property, Plant and Equipment:

Property, plant and equipment is stated on the basis of cost.

Depreciation of property, plant and equipment is computed by the straight-line method over the estimated useful lives of the respective assets as prescribed by the Corporation Tax Law of Japan. Significant renewals and additions are capitalized at cost. Maintenance and repairs are charged to income as incurred.

### Marketable Securities and Investments in Securities:

Listed securities are stated at the lower of cost (determined by the moving average method) or market. Securities other than listed securities are stated at cost or less.

### Income Taxes:

Income taxes are calculated on taxable income and charged to income on an accrual basis. Deferred income taxes pertaining to timing differences between financial and tax reporting are not provided.

### Research and Development Expenses:

Research and development expenses are charged to income as incurred.

### Retirement Allowances and Pension Plans:

Until June 30, 1988, the Company had an unfunded employee retirement allowances plan. Effective July 1, 1988, the Company instituted a non-contributory funded pension plan covering all employees which has replaced the prior employee retirement allowances plan. Under the pension plan, employees are entitled to an annuity or a lump-sum payment at the time of termination, the amount of which is determined on the basis of length of service, approximate rate of pay at the time of termination and certain other factors.

Costs with respect to the employee pension plan are funded and accrued at an amount determined actuarially. Past service cost at the inception of the non-contributory pension plan is being funded over approximately 9 years.

In addition, directors and statutory auditors are customarily entitled to lump-sum payments under an unfunded retirement allowances plan. The provision for retirement allowances for these officers has been made at an estimated amount.

### Leases:

Noncancelable lease transactions are accounted for as operating leases (whether such leases are classified as operating leases or finance leases) except that lease agreements which stipulate the transfer of ownership of the leased assets to the Company are accounted for as finance leases.

### Amounts Per Share:

The computation of basic net income per share is based on the weighted average number of shares of common stock outstanding during each year. Diluted net income per share is computed based on the weighted average number of shares of common stock outstanding during each year after giving effect to the dilutive potential of the common stock to be issued upon the conversion of convertible bonds. No diluted net income per share for the years ended December 31, 1998 and 1997 is presented because the effect of such conversion was anti-dilutive.

Cash dividends per share represent the cash dividends declared as applicable to the respective years together with the interim cash dividends paid.

## 2. U.S. Dollar Amounts

The translation of yen amounts into U.S. dollar amounts is included solely for convenience, as a matter of arithmetic computation only, at the rate of ¥115.70=\$1.00, the approximate exchange rate at December 31, 1998. The translation should not be construed as a representation that yen have been, could have been, or could in the future be, converted into U.S. dollars at the above or any other rate.

## 3. Marketable and Investment Securities

The book and related aggregate market values of current and noncurrent marketable securities included in marketable securities, investments in and advances to subsidiaries and affiliates, and investments in securities at December 31, 1998 and 1997 are summarized as follows:

	(Millions of Yen)			
	1998		1997	
	Book value	Market value	Book value	Market value
Marketable securities.....	<u>¥10,986</u>	<u>¥14,673</u>	<u>¥12,021</u>	<u>¥18,769</u>
Investments in securities, including investments in subsidiaries and affiliates .....	<u>¥ 3,482</u>	<u>¥10,411</u>	<u>¥ 3,592</u>	<u>¥11,895</u>

	(Thousands of U.S. dollars)	
	1998	
	Book value	Market value
Marketable securities .....	<u>\$94,953</u>	<u>\$126,819</u>
Investments in securities, including investments in subsidiaries and affiliates .....	<u>\$30,095</u>	<u>\$ 89,982</u>

#### 4. Inventories

Inventories at December 31, 1998 and 1997 were composed of the following:

	Millions of yen		Thousands of U.S. dollars
	1998	1997	1998
Finished goods.....	<u>¥6,466</u>	¥6,054	<u>\$55,886</u>
Semi-finished goods .....	<u>576</u>	604	<u>4,979</u>
Work in process.....	<u>14</u>	19	<u>121</u>
Raw materials and supplies.....	<u>1,795</u>	1,801	<u>15,514</u>
	<u>¥8,851</u>	<u>¥8,478</u>	<u>\$76,500</u>

#### 5. Short-Term Bank Loans and Long-Term Debt

Short-term bank loans, principally unsecured, were notes payable to banks bearing interest at 1.5 per cent. and 1.625 per cent. per annum at December 31, 1998 and 1997, respectively.

Long-term debt at December 31, 1998 and 1997 is summarized as follows:

	Millions of yen		Thousands of U.S. dollars
	1998	1997	1998
1.7% yen convertible bonds due 1998 .....	¥ —	¥18,592	\$ —
2.45% yen bonds due 2001.....	<u>10,000</u>	10,000	<u>86,430</u>
1.90% yen bonds due 2003.....	<u>10,000</u>	—	<u>86,430</u>
2.25% yen bonds due 2004.....	<u>10,000</u>	—	<u>86,430</u>
Loans with collateral from banks, insurance companies and others .....	<u>12,366</u>	3,231	<u>106,881</u>
	<u>42,366</u>	31,823	<u>366,171</u>
Less: Current portion .....	<u>(1,019)</u>	(19,449)	<u>(8,807)</u>
	<u>¥41,347</u>	<u>¥12,374</u>	<u>\$357,364</u>

Assets pledged as collateral for short-term bank loans and long-term debt at December 31, 1998 and 1997 were as follows:

	Millions of yen		Thousands of U.S. dollars
	1998	1997	1998
Property, plant and equipment, at net book value.....	<u>¥31,550</u>	¥31,824	<u>\$272,688</u>
Marketable securities and investments in securities .....	<u>3,507</u>	2,217	<u>30,311</u>
	<u>¥35,057</u>	<u>¥34,041</u>	<u>\$302,999</u>

The aggregate annual maturities of long-term debt subsequent to December 31, 1998 are summarized as follows:

For the year ending December 31	Millions of yen	Thousands of U.S. dollars
	1999.....	¥ 1,019
2000.....	1,243	10,743
2001.....	10,808	93,414
2002.....	389	3,362
2003.....	17,589	152,023
2004 and thereafter.....	<u>11,318</u>	<u>97,822</u>
	<u>¥42,366</u>	<u>\$366,171</u>

#### 6. Shareholders' Equity

In accordance with the Commercial Code of Japan, the Company has provided a legal reserve as an appropriation of retained earnings. The Code provides that neither the capital surplus, consisting principally of additional paid-in capital, nor the legal reserve is available for dividends, but both may be used to reduce or eliminate a deficit by resolution of the shareholders or may be transferred to stated capital (common stock) by resolution of the Board of Directors.

Pursuant to a resolution passed at the shareholders' meeting held on March 28, 1997, the Company repurchased and retired 12,350 thousand shares of the Company's common stock for the aggregate cost of ¥5,000 million during the year ended December 31, 1997.

#### 7. Research and Development Expenses

Research and development expenses included in selling, general and administrative expenses for the years ended December 31, 1998 and 1997 were as follows:

	Millions of yen		Thousands of U.S. dollars
	1998	1997	1998
	<u>¥4,714</u>	¥4,738	<u>\$40,743</u>

#### 8. Depreciation

Depreciation charged to income for the years ended December 31, 1998 and 1997 was as follows:

	Millions of yen		Thousands of U.S. dollars
	1998	1997	1998
	<u>¥5,481</u>	¥5,413	<u>\$47,373</u>

#### 9. Income Taxes

Income taxes applicable to the Company comprise corporation, inhabitants' and enterprise taxes, which, in the aggregate, resulted in a statutory tax rate of approximately 51% in both 1998 and 1997. The effective tax rates reflected in the accompanying non-consolidated statements of income differ from the statutory tax rate primarily due to the effect of timing differences in the recognition of certain income and expenses for tax and financial reporting purposes and the effect of permanent nondeductible expenses.

#### 10. Retirement Allowances and Pension Plans

The charges to income for pension cost and retirement allowances for the years ended December 31, 1998 and 1997 were as follows:

	Millions of yen		Thousands of U.S. dollars
	1998	1997	1998
Retirement allowances .....	<u>¥ 105</u>	¥ 80	<u>\$ 908</u>
Pension cost .....	<u>1,280</u>	991	<u>11,063</u>

The assets of the pension plan at June 30, 1998 were ¥4,018 million (\$34,728 thousand).

## 11. Leases

The following pro forma amounts represent the acquisition cost, accumulated depreciation and net book value of leased property as of December 31, 1998 and 1997, which would have been reflected in the balance sheets if finance lease accounting had been applied to the finance lease transactions currently accounted for as operating leases:

	Millions of yen		Thousands of U.S. dollars
	1998	1997	1998
Acquisition cost:			
Machinery and equipment.....	<u>¥1,552</u>	<u>¥1,398</u>	<u>\$13,414</u>
Accumulated depreciation:			
Machinery and equipment.....	<u>¥ 894</u>	<u>¥ 646</u>	<u>\$ 7,727</u>
Net book value:			
Machinery and equipment.....	<u>¥ 658</u>	<u>¥ 752</u>	<u>\$ 5,687</u>

Lease payments relating to finance lease transactions accounted for as operating leases amounted to ¥285 million (\$2,463 thousand) and ¥223 million, which were equal to the depreciation expense of the leased assets computed by the straight-line method over the respective lease terms for the years ended December 31, 1998 and 1997, respectively.

Future minimum lease payments (including the interest portion thereon) subsequent to December 31, 1998 for finance lease transactions accounted for as operating leases are summarized as follows:

Year ending December 31	Millions of yen	Thousands of U.S. dollars
1999 .....	<u>¥267</u>	<u>\$2,308</u>
2000 and thereafter .....	<u>391</u>	<u>3,379</u>
Total .....	<u>¥658</u>	<u>\$5,687</u>

## 12. Contingent Liabilities

At December 31, 1998, the Company had the following contingent liabilities:

	Millions of yen	Thousands of U.S. dollars
Guarantees of indebtedness.....	<u>¥5,387</u>	<u>\$46,560</u>
Export bills discounted.....	<u>5</u>	<u>43</u>
	<u>¥5,392</u>	<u>\$46,603</u>

## 13. Derivative Transactions

The Company has entered into foreign exchange contracts to reduce its exposure to adverse fluctuations in foreign exchange rates relating to receivables and payables denominated in foreign currencies. Forward exchange contracts to sell U.S. dollars amounted to ¥936 million (\$8,090 thousand) at December 31, 1998, and the related market value of these contracts based on forward rates was ¥891 million (\$7,701 thousand) at December 31, 1998. These amounts, however, exclude contracts entered into to hedge receivables and payables denominated in foreign currencies which have been translated and reflected at the corresponding contracted rates in the accompanying balance sheets.

In addition, the Company has entered into interest rate swap agreements to reduce its interest expense or reduce its exposure to adverse fluctuations in interest rates relating to loans and bonds payable. The total notional amounts of these interest rate swap agreements at December 31, 1998 and 1997 were ¥3,000 million (\$25,929 thousand) and ¥300 million, respectively, all of which related to swap positions whose terms extend more than one year subsequent to the balance sheet date. Net unrealized gain related to these agreements at December 31, 1998 amounted to ¥76 million (\$657 thousand).

## 14. Subsequent Event

The following appropriations of retained earnings, which have not been reflected in the accompanying non-consolidated financial statements for the year ended December 31, 1998, were approved at a shareholders' meeting held on March 30, 1999:

	Millions of yen	Thousands of U.S. dollars
Cash dividends — ¥3.00 (\$0.026)		
per share .....	<u>¥801</u>	<u>\$6,923</u>
Transfer to legal reserve.....	<u>90</u>	<u>778</u>
Bonuses to directors.....	<u>25</u>	<u>216</u>
	<u>¥916</u>	<u>\$7,917</u>

## Report of Certified Public Accountants

### The Board of Directors Toagosei Co., Ltd.

We have examined the non-consolidated balance sheets of Toagosei Co., Ltd. as of December 31, 1998 and 1997, and the related non-consolidated statements of income, shareholders' equity, and cash flows for the years then ended, all expressed in yen. Our examinations were made in accordance with auditing standards generally accepted in Japan and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the accompanying non-consolidated financial statements, expressed in yen, present fairly the financial position of Toagosei Co., Ltd. at December 31, 1998 and 1997, and the results of its operations and its cash flows for the years then ended in conformity with accounting principles generally accepted in Japan applied on a consistent basis.

The U.S. dollar amounts in the accompanying non-consolidated financial statements with respect to the year ended December 31, 1998 are presented solely for convenience. Our examination also included the translation of yen amounts into U.S. dollar amounts and, in our opinion, such translation has been made on the basis described in Note 2 to the non-consolidated financial statements.

*Showa Ota & Co.*

March 30, 1999

# CONSOLIDATED BALANCE SHEETS

Toagosei Co., Ltd. and Consolidated Subsidiaries December 31, 1998 and 1997

Assets	Millions of yen		Thousands of U.S. dollars (Note 2)
	1998	1997	1998
<b>Current assets</b>			
Cash and time deposits	¥ 12,994	¥ 9,897	\$ 112,308
Marketable securities (Note 3)	11,969	13,339	103,449
Receivables:			
Notes and accounts receivable:			
Unconsolidated subsidiaries and affiliates	1,586	1,476	13,708
Trade	49,929	52,865	431,538
Advances to and loans receivable from unconsolidated subsidiaries and affiliates	702	443	6,068
	52,217	54,784	451,314
Allowance for doubtful receivables	(411)	(448)	(3,552)
	51,806	54,336	447,762
Inventories	15,051	14,679	130,086
Other current assets	2,708	1,299	23,405
<b>Total current assets</b>	<b>94,528</b>	<b>93,550</b>	<b>817,010</b>
<b>Property, plant and equipment</b> (Note 3)	<b>240,773</b>	<b>223,402</b>	<b>2,081,011</b>
Accumulated depreciation	(151,451)	(142,516)	(1,308,997)
	89,322	80,886	772,014
<b>Investments and other assets</b>			
Investments in and advances to unconsolidated subsidiaries and affiliates	7,419	4,783	64,123
Investments in securities (Note 3)	2,809	3,288	24,278
Other assets	9,510	8,273	82,195
	19,738	16,344	170,596
Translation adjustments	200	2	1,728
<b>Total</b>	<b>¥203,788</b>	<b>¥190,782</b>	<b>\$1,761,348</b>

See accompanying notes to consolidated financial statements.

<b>Liabilities and Shareholders' Equity</b>	Millions of yen		Thousands of U.S. dollars (Note 2)
	<b>1998</b>	1997	<b>1998</b>
<b>Current liabilities</b>			
Short-term bank loans (Note 3)	¥ 8,788	¥ 8,850	\$ 75,955
Current portion of long-term debt	2,646	20,888	22,870
Commercial paper	12,000	9,000	103,717
Payables:			
Unconsolidated subsidiaries and affiliates	1,144	1,285	9,888
Trade	21,655	24,337	187,165
Notes payable for acquisition of property, plant and equipment	2,605	2,939	22,515
Other	5,857	5,397	50,622
	31,261	33,958	270,190
Accrued expenses	2,414	2,101	20,864
Accrued income taxes	705	731	6,093
Other current liabilities	754	730	6,517
<b>Total current liabilities</b>	<b>58,568</b>	76,258	<b>506,206</b>
<b>Long-term liabilities</b>			
Long-term debt (Note 3)	47,184	16,462	407,813
Retirement allowances	3,017	2,768	26,076
Other long-term liabilities	2,242	2,452	19,378
	52,443	21,682	453,267
<b>Minority interests in consolidated subsidiaries</b>	<b>12,113</b>	11,843	<b>104,693</b>
<b>Shareholders' equity</b> (Note 7)			
Common stock, ¥50 par value:			
Authorized—467,650,000 shares			
Issued:			
1998—267,129,768 shares	20,886	—	180,519
1997—267,129,768 shares	—	20,886	—
Capital surplus	15,623	15,623	135,030
Legal reserve	3,570	3,402	30,855
Retained earnings	40,585	41,088	350,778
Less treasury stock, at cost	(0)	(0)	(0)
	80,664	80,999	697,182
<b>Contingent liabilities</b> (Note 4)			
<b>Total</b>	<b>¥203,788</b>	¥190,782	<b>\$1,761,348</b>

# CONSOLIDATED STATEMENTS OF INCOME AND RETAINED EARNINGS

Toagosei Co., Ltd. and Consolidated Subsidiaries Years ended December 31, 1998 and 1997

	Millions of yen		Thousands of U.S. dollars (Note 2)
	1998	1997	1998
Net sales	<b>¥145,896</b>	¥159,396	<b>\$1,260,985</b>
Cost of sales	<b>105,524</b>	116,926	<b>912,048</b>
<b>Gross profit</b>	<b>40,372</b>	42,470	<b>348,937</b>
Selling, general and administrative expenses	<b>34,629</b>	33,870	<b>299,300</b>
<b>Operating income</b>	<b>5,743</b>	8,600	<b>49,637</b>
Other income (expenses):			
Interest and dividend income	<b>534</b>	446	<b>4,615</b>
Interest expense	<b>(1,305)</b>	(1,193)	<b>(11,279)</b>
Unrealized loss on securities	<b>(1,470)</b>	(2,309)	<b>(12,705)</b>
Other, net	<b>(812)</b>	246	<b>(7,018)</b>
<b>Income before income taxes and minority interests</b>	<b>2,690</b>	5,790	<b>23,250</b>
Income taxes	<b>1,981</b>	3,408	<b>17,122</b>
<b>Income before minority interests</b>	<b>709</b>	2,382	<b>6,128</b>
Minority interests in earnings of consolidated subsidiaries	<b>(455)</b>	(558)	<b>(3,933)</b>
<b>Net income</b>	<b>254</b>	1,824	<b>2,195</b>
Retained earnings at beginning of the year	<b>41,088</b>	46,125	<b>355,125</b>
Adjustment to retained earnings for inclusion in consolidation or the equity method of accounting for subsidiaries and affiliates	<b>1,084</b>	66	<b>9,369</b>
Cash dividends paid	<b>(1,602)</b>	(1,658)	<b>(13,846)</b>
Directors' bonuses	<b>(71)</b>	(91)	<b>(613)</b>
Transfer to legal reserve	<b>(168)</b>	(178)	<b>(1,452)</b>
Redemption and retirement of treasury stock	<b>—</b>	(5,000)	<b>—</b>
<b>Retained earnings at end of the year</b>	<b>¥ 40,585</b>	<b>¥ 41,088</b>	<b>\$ 350,778</b>

Amounts per share:	Yen		U.S. dollars (Note 2)
Net income:			
Basic	<b>¥ 0.95</b>	¥ 6.67	<b>\$ 0.0082</b>
Diluted	<b>—</b>	6.66	<b>—</b>
Cash dividends	<b>6.00</b>	6.00	<b>0.0518</b>

See accompanying notes to consolidated financial statements.

# NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Toagosei Co., Ltd. and Consolidated Subsidiaries December 31, 1998

## 1. Summary of Significant Accounting Policies

The accompanying consolidated financial statements are prepared on the basis of the same accounting policies as those discussed in Note 1 to the non-consolidated financial statements except for the following policies:

### Principles of Consolidation and Accounting for Investments in Unconsolidated Subsidiaries and Affiliates:

The accompanying consolidated financial statements include the accounts of Toagosei Co., Ltd. (the "Company") and its significant subsidiaries. All intercompany balances and transactions have been eliminated in consolidation.

Investments in unconsolidated subsidiaries and affiliates (companies owned 20% to 50%) not accounted for by the equity method are substantially carried at cost.

The difference at the dates of acquisition between the cost and the underlying net equity of investments in consolidated subsidiaries and companies accounted for by the equity method is being amortized by the straight-line method over a period of five years.

### Foreign Currency Translation:

Revenue and expense accounts of a foreign consolidated subsidiary are translated at the rate of exchange in effect at the balance sheet date, and, except for the components of shareholders' equity, the balance sheet accounts are also translated into yen at the same exchange rate. The components of shareholders' equity are translated at the historical exchange rates.

Translation differences are presented as "Translation adjustments" in the accompanying consolidated financial statements.

### Property, Plant and Equipment:

Depreciation of property, plant and equipment is computed principally by the straight-line method over the estimated useful lives of the respective assets, except for six consolidated subsidiaries for which depreciation is computed by the declining-balance method over the estimated useful lives of the respective assets.

### Retirement Allowances and Pension Plans:

The Company and six consolidated subsidiaries have non-contributory funded pension plans covering substantially all employees which have replaced the prior employee retirement allowances plans. The liability for retirement allowances of one of these consolidated subsidiaries represents the unamortized balance of the previously accrued liability at the inception of the non-contributory pension plan. The liability for retirement allowances of the six consolidated subsidiaries is principally stated at the maximum amount allowable for income tax purposes, which is 40% of the amount which would be required to be paid if all eligible employees terminated their employment voluntarily at the balance sheet date. Two other consolidated subsidiaries record 100% of their liability, less the fund balance of their non-contributory funded pension plan.

In addition, directors and statutory auditors of the Company and certain consolidated subsidiaries are customarily entitled to lump-sum payments under the unfunded retirement plans. The provision for retirement allowances for these officers has been made at estimated amounts.

## 2. U.S. Dollar Amounts

The translation of yen amounts into U.S. dollar amounts is included solely for convenience, as a matter of arithmetic computation only, at the rate of ¥115.70=\$1.00, the approximate exchange rate at December 31, 1998. The translation should not be construed as a representation that yen have been, could have been, or could in the future be, converted into U.S. dollars at the above or any other rate.

## 3. Pledged Assets

Assets pledged as collateral for the Company's and its consolidated subsidiaries' obligations at December 31, 1998 and 1997 were as follows:

	Millions of yen		Thousands of U.S. dollars
	1998	1997	1998
Property, plant and equipment, at net book value.....	¥53,570	¥48,772	\$463,008
Marketable securities and investments in securities .....	3,548	2,265	30,665
	<u>¥57,118</u>	<u>¥51,037</u>	<u>\$493,673</u>

## 4. Contingent Liabilities

At December 31, 1998, the Company and its consolidated subsidiaries had the following contingent liabilities:

	Millions of yen	Thousands of U.S. dollars
Trade notes receivable and export bills discounted .....	¥ 224	\$ 1,936
Guarantees of indebtedness .....	4,536	39,205
	<u>¥4,760</u>	<u>\$41,141</u>

## 5. Leases

Lease payments relating to finance lease transactions accounted for as operating leases amounted to ¥368 million (\$3,181 thousand) and ¥281 million for the years ended December 31, 1998 and 1997, respectively. Future minimum lease payments (including the interest portion thereon) subsequent to December 31, 1998 for finance lease transactions accounted for as operating leases are summarized as follows:

Year ending December 31	Millions of yen	Thousands of U.S. dollars
1999 .....	¥ 348	\$ 3,008
2000 and thereafter .....	549	4,745
	<u>¥ 897</u>	<u>\$ 7,753</u>

## 6. Segment Information

The Company and its consolidated subsidiaries are primarily engaged in the manufacture and sales of products in the chemical industry segment in Japan. As net sales, operating income and total assets from the chemical business of the Company and its consolidated subsidiaries constituted more than 90% of the consolidated totals for both the years ended December 31, 1998 and 1997, the disclosure of business segment information has been omitted.

The disclosure of geographical segment information has also been omitted as net sales and total assets of the foreign operations constituted less than 10% of the consolidated totals for both the years ended December 31, 1998 and 1997.

Overseas sales of the Company and its consolidated subsidiaries constituted less than 10% of the consolidated net sales for both the years ended December 31, 1998 and 1997.

## 7. Subsequent Event

See Note 14 to the non-consolidated financial statements.

### Report of Certified Public Accountants

#### The Board of Directors Toagosei Co., Ltd.

We have examined the consolidated balance sheets of Toagosei Co., Ltd. and its consolidated subsidiaries as of December 31, 1998 and 1997, and the related consolidated statements of income and retained earnings for the years then ended, all expressed in yen. Our examinations were made in accordance with auditing standards generally accepted in Japan and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the accompanying consolidated financial statements, expressed in yen, present fairly the financial position of Toagosei Co., Ltd. and its consolidated subsidiaries at December 31, 1998 and 1997, and the results of their operations for the years then ended in conformity with accounting principles generally accepted in Japan applied on a consistent basis.

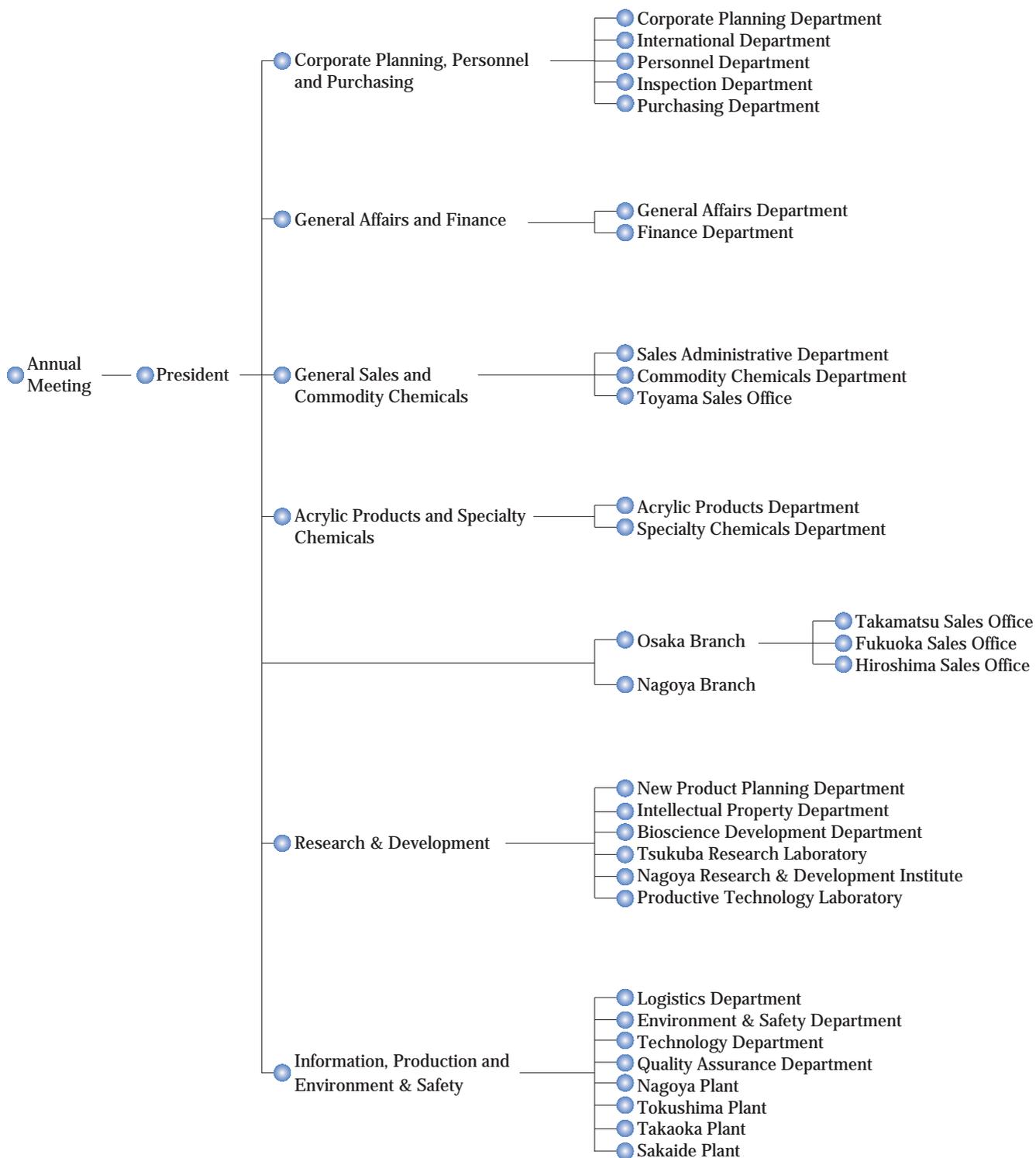
The U.S. dollar amounts in the accompanying consolidated financial statements with respect to the year ended December 31, 1998 are presented solely for convenience. Our examination also included the translation of yen amounts into U.S. dollar amounts and, in our opinion, such translation has been made on the basis described in Note 2 to the consolidated financial statements.

*Showa Ota & Co.*

March 30, 1999

# CORPORATE DATA

## Organization (As of March 30, 1999)



## Directory

### Domestic Network

#### Head Office

1-14-1, Nishi-Shimbashi, Minato-ku  
Tokyo 105-8419, Japan  
Tel: (03) 3597-7215  
Fax: (03) 3597-7217

#### Osaka Branch

3-6-2, Hiranomachi, Chuo-ku  
Osaka 541-0046, Japan  
Tel: (06) 6203-3171  
Fax: (06) 6203-6870

#### Nagoya Branch

1-16-30, Meieki-minami, Nakamura-ku  
Nagoya 450-0003, Japan  
Tel: (052) 541-1181  
Fax: (052) 581-1817

#### Toyama Sales Office

5-13, Sakurabashi-dori  
Toyama 930-0004, Japan  
Tel: (0764) 42-2311  
Fax: (0764) 41-3690

#### Takamatsu Sales Office

3, Kajiyamachi, Takamatsu 760-0028  
Japan  
Tel: (087) 825-2671  
Fax: (087) 822-1276

#### Fukuoka Sales Office

2-14-2, Tenjin, Chuo-ku  
Fukuoka 810-0001, Japan  
Tel: (092) 721-1902  
Fax: (092) 721-1914

#### Hiroshima Sales Office

11-10, Motomachi, Naka-ku  
Hiroshima 730-0011, Japan  
Tel: (082) 228-5430  
Fax: (082) 227-6737

#### Nagoya Plant

17-23, Showacho, Minato-ku  
Nagoya 455-0026, Japan  
Tel: (052) 611-9804  
Fax: (052) 612-5733

#### Tokushima Plant

575-1, Nakashima, Kawauchicho  
Tokushima 771-0188, Japan  
Tel: (088) 665-2111  
Fax: (088) 665-3867

#### Takaoka Plant

2-1-3, Fushiki, Takaoka 933-0195, Japan  
Tel: (0766) 44-7401  
Fax: (0766) 44-7410

#### Sakaide Plant

2-4-1, Showacho, Sakaide 762-0004  
Japan  
Tel: (0877) 46-3161  
Fax: (0877) 45-4727

#### Nagoya Research & Development Institute

1-1, Funamicho, Minato-ku  
Nagoya 455-0027, Japan  
Tel: (052) 611-9901  
Fax: (052) 611-1693

#### Tsukuba Research Laboratory

2, Okubo, Tsukuba 300-2611, Japan  
Tel: (0298) 65-2600  
Fax: (0298) 65-2610

### Overseas Subsidiaries

#### Toagosei Hong Kong Ltd.

Room 1111 11/FL, Kwong Sang Hong  
Centre, 151-153 Hoi Bun Road  
Kwun Tong, Kowloon, Hong Kong  
Tel: 852-27631086  
Fax: 852-27631798

#### Toagosei America Inc.

650 Shawan Falls Drive, Suite 205  
Dublin, OH 43017, USA  
Tel: 614-718-3855  
Fax: 614-718-3866

#### Toagosei Asia Pte Ltd

1 Robinson Road, #21-02 AIA Tower  
Singapore 048542  
Tel: 65-4385411  
Fax: 65-4385422

## Principal Subsidiaries and Affiliates (As of December 31, 1998)

Name of Company	Line of Business	Our Share (%)	Capital (Million ¥)
Aron Kasei Co., Ltd.	PVC pipes, plates, plastic moldings	61.1	4,220
Tsurumi Soda Co., Ltd.	Caustic soda, chlorides	61.5	2,080
Oita Chemical Co., Ltd.	Acrylic acid, acrolein	90	1,500
Kawasaki Organic Chemical Co., Ltd.	Polyvinyl chloride	70	1,000
Nihon Junyaku Co., Ltd.	Food additives, fine industrial and laboratory chemicals	96	351
Toa Kogyo Co., Ltd.	Transportation, operation of filling stations	100	25
Toa Kakoki Co., Ltd.	Construction and repair of chemical facilities	100	50
Toa Estate Co., Ltd.	Real estate management	100	30
Chubu Ekisan Co., Ltd.	Liquid oxygen, nitrogen, and argon; nitrogen gas	30	480
Toyo Denka Industry Co., Ltd.	Carbide, ferro-alloys	33	300
D.S.T. Micronics Co., Ltd.	Precision electronic parts for CRT	30	3,000
Kyoei Co., Ltd.	Sales of chemical products	100	100
Toagosei America Inc.	Sales of chemical products	100	US\$6,100,000
Toagosei Hong Kong Ltd.	Sales of chemical products	100	HK\$10,988,000
Toagosei Asia Pte Ltd	Sales of chemical products	100	S\$37,848,150
Borden-Toagosei Co.*	Adhesives	—	—

\* Joint-venture company with Borden Inc.

## Investor Information

### Corporate Headquarters

1-14-1, Nishi-Shimbashi, Minato-ku, Tokyo 105-8419

Tel: (03) 3597-7215

Fax: (03) 3597-7217

Internet: <http://www.toagosei.co.jp/>

### Established

March, 1942

### Common Stock

Authorized: 467,650,000 shares

Issued: 267,129,768 shares

Capital: ¥20,886 million

Number of shareholders: 27,812

Listings: Common stock listed on the exchanges in Tokyo, Osaka, Nagoya, Fukuoka and Niigata

### Transfer Agent of Common Stock

The Chuo Trust and Banking Co., Ltd.

1-7-1, Kyobashi, Chuo-ku, Tokyo 104-8345

### Certified Accountants

Showa Ota & Co.

Hibiya Kokusai Bldg., 2-2-3, Uchisaiwai-cho

Chiyoda-ku, Tokyo 100-0011

### Major Shareholders and Their Holdings

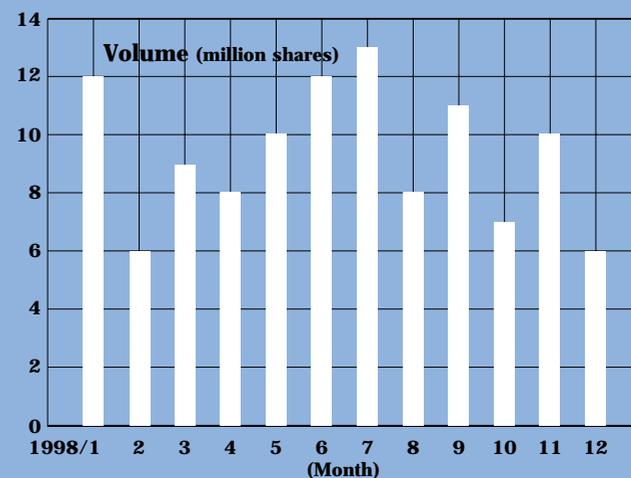
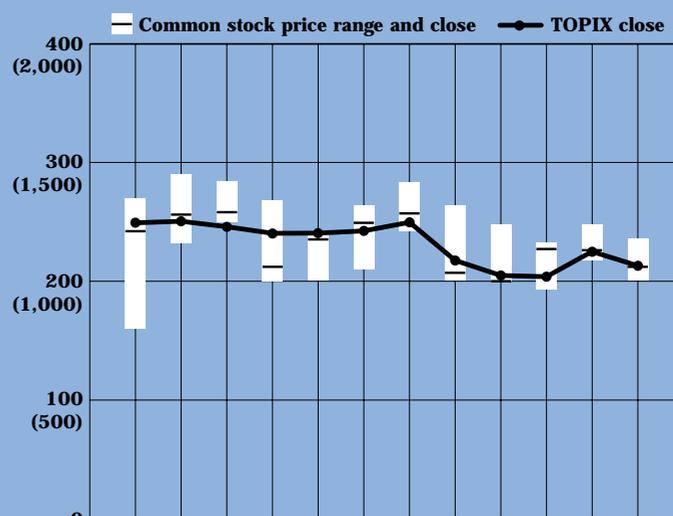
(percent)

The Sumitomo Trust & Banking Company, Limited .....	5.93
The Sakura Bank, Limited .....	4.25
The Tokai Bank, Limited.....	4.22
The Industrial Bank of Japan, Limited.....	3.78
The Chiyoda Mutual Life Insurance Company .....	3.31
Mitsui Mutual Life Insurance Company .....	2.82
The Norinchukin Bank.....	2.59
The Mitsui Trust and Banking Company, Limited.....	2.26
The Tokio Marine and Fire Insurance Company, Limited ....	2.13
The Yasuda Trust & Banking Co., Ltd.....	2.13

(As of December 31, 1998)

### Stock Price Range & Trading Volume (Tokyo Stock Exchange)

	1994	1995	1996	1997	1998
High	¥690	¥605	¥611	¥496	¥290
Low	¥442	¥371	¥400	¥161	¥160
TOPIX Close (Dec. 31)	1,559	1,578	1,470	1,203	1,086





1-14-1, Nishi-Shimbashi, Minato-ku,  
Tokyo 105-8419, Japan  
Tel: (03) 3597-7215  
Fax: (03) 3597-7217