Financial Factbook 2016

TOAGOSEI

Management's Discussion & Analysis

The financial section was translated into English based on some disclosed documents including the securities report of the Japanese version and is provided for information purpose only.

Overview of Fiscal 2016

During the reporting term (January 1 to December 31, 2016), the domestic economy moderately recovered, thanks mainly to improving employment conditions and steady corporate earnings. While the US economy continued to progress favorably, the outlook for the global economy became increasingly uncertain due to the prolonged sluggish performance in the economies of emerging countries such as China and growing political risks in Europe and North America.

In the overall surroundings of Toagosei Group (hereinafter "the Group"), demand for high-performance and high value-added products mainly used for semiconductors and automotive parts steadily recovered, while prices for crude oil and other natural resources remained mostly stable throughout the term. Accordingly, in spite of decreased net sales resulting from intensifying downward pressure on general-purpose products, a decrease in variable manufacturing costs contributed to increased earnings.

As a result, net sales in the reporting term decreased by 3.2% year on year on a consolidated basis to ¥135,382 million, while operating income increased by 30.8% to ¥16,147 million and ordinary profit increased by 28.3% to ¥16,935 million. Net income attributable to owners of parent increased by 106.1% to ¥13,801 million, mainly due to the posting of a gain on sales of idle real estate and investment securities.

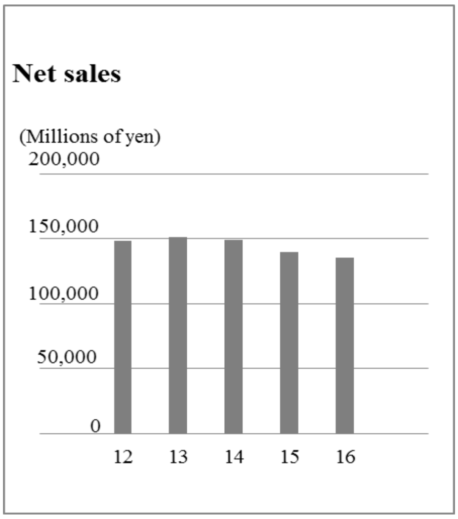
Effective from the reporting term, the Company's sales businesses for construction repair materials and civil engineering repair materials were succeeded by Aronkasei Co., Ltd., a consolidated subsidiary, through a company split. As a result of this business succession, the segmental performance of products for construction and civil engineering was reclassified from the previous segment of Specialty Chemicals to Plastics. Year-on-year comparison of performance was made using the figures for the previous term that were prepared using the classification method after the change.

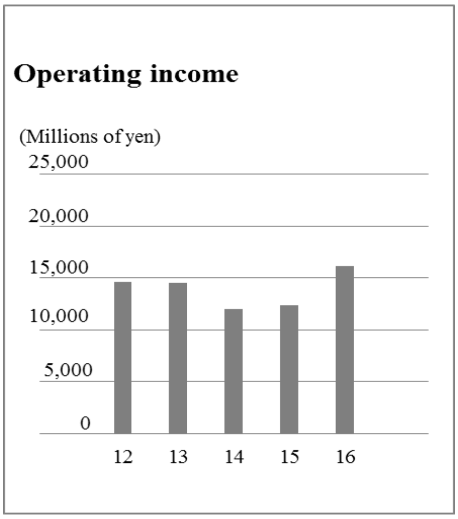
Sales by Segment

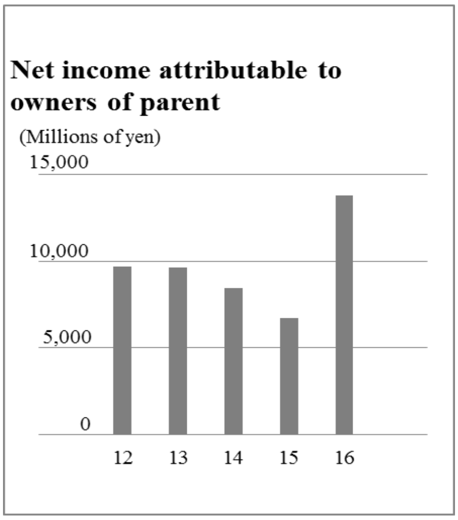
Commodity Chemicals

In Commodity Chemicals, sales of caustic soda and inorganic chlorides declined mainly due to the lingering trend in weakening demand and the resulting sluggish sales prices. High-purity products sales increased, as the demand for products centered on semiconductor applications recovered from the weakness in the first half of the term. Sales of sulfuric acid and industrial gasses stayed at the same level as in the previous term, buoyed by stable demand in spite of the decline of product prices. As a result, sales in this segment decreased by 2.9% year on year to ¥41,217 million.

In spite of the downward pressure on income associated with falling product prices, segment income increased by 44.6% to ¥4,869 million mainly thanks to increased sales of high-purity products and lower variable manufacturing costs attributable to stable prices for raw materials and fuels.







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Acrylic Products

Sales of acrylic acid and acrylic esters declined in spite of steady sales volume, on the significant impact of declining product prices associated with falling raw material prices. Sales of acrylic polymers increased because of strong sales of high-performance and high value-added products. Sales of polymer flocculants decreased mainly due to declining product prices. Sales of UV-curable resin decreased due to overall sluggish demand. As a result, sales in this segment decreased by 5.4% year on year to ¥49,213 million.

Segment income increased by 64.3% to ¥5,276 million mainly on the effect of streamlining fixed costs in a subsidiary in Singapore and other companies, along with a sales increase in acrylic polymers and lower variable costs attributable to falling raw material prices.

Specialty Chemicals

Sales of instant glues decreased in spite of steady domestic sales, mainly due to a fall in overseas sales on the impact of fluctuating exchange rates. Sales of functional adhesives decreased due to sluggish sales volume mainly resulting from declining demand for high-performance information devices. Sales of amenity care materials and electronics materials increased due to favorable sales of the ion-trapping agent IXE®, the inorganic deodorant KESMON®, and other products. As a result, sales in this segment decreased by 2.1% year on year to ¥15,346 million.

Segment income declined by 10.0% to ¥3,739 million in spite of increased income from amenity care materials and electronics materials, mainly on the impact of rising fixed costs stemming from factors such as decreased sales of adhesives and increased advertising and promotional expenses.

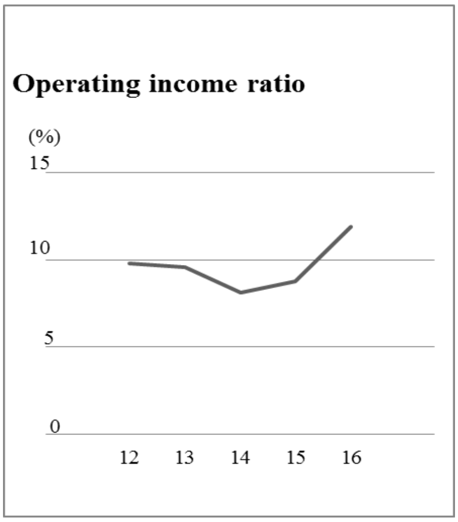
Plastics

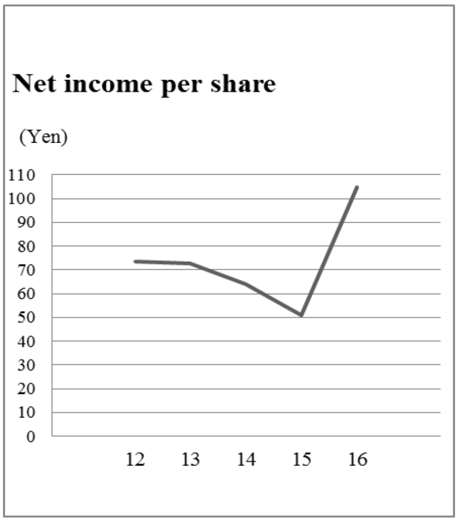
Sales of piping equipment decreased mainly due to declines in product prices attributable to falling raw material prices, while the market environment trended upward due to factors such as rising housing starts. Sales of products for construction and civil engineering increased thanks to an increase in sales volume. Nursing care product sales increased slightly mainly due to the effects of revised sales prices. Sales of elastomer compounds increased due to favorable sales of products for medical care and beverages. As a result, sales in this segment decreased by 0.3% year on year to ¥26,447 million.

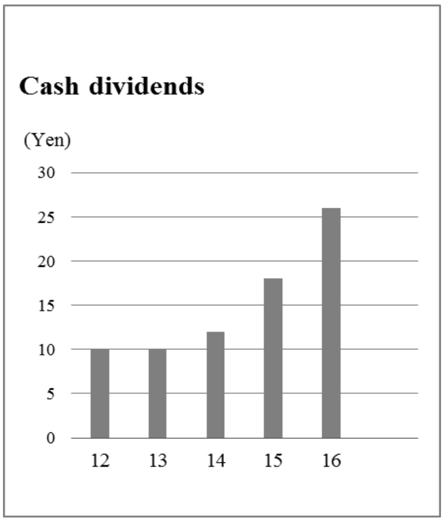
Segment income surged by 39.5% to ¥2,038 million, affected mainly by increased sales of nursing care products and elastomer compounds and a decrease in variable manufacturing costs associated with a decline in the prices of major raw materials.

Other Businesses

Sales for this segment which comprises new product development operations, goods transportation services, and trading house operations increased by 0.5% year on year to ¥3,156 million, and segment income totaled ¥209 million.







(Notes) 1. We have executed a two-for-one reverse stock split effective on July 1, 2015. Net income per share is calculated assuming that the two-for-one reverse stock split was executed at the beginning of fiscal 2012.
2. For fiscal 2015, the total annual dividend of ¥18 per share consists of an interim dividend of ¥6 per share and a term-end dividend of ¥12 per share. As we implemented a two-for-one reverse stock split effective on July 1, 2015, the interim dividend of ¥6 per share is an amount before the reverse stock split and the term-end dividend of ¥12 per share is an amount after the reverse stock split.

Cash Flows

Net cash provided by operating activities decreased by ¥1,323 million year on year to ¥21,989 million due to an increase in income taxes paid in spite of increases in income before income taxes.

Net cash used in investing activities increased by ¥13,081 million to ¥17,673 million due to increases in time deposits, operation of securities, and purchases of property, plant and equipment.

Net cash used in financing activities decreased by ¥9 million to ¥3,939 million due to a decrease in repayment of long-term debt in spite of an increase in cash dividends paid.

As a result, cash and cash equivalents at end of the year stood at ¥54,231 million, an increase of ¥254 million from the previous term-end.

Business Performance Prospects for Fiscal 2017

For the current term ending December 31, 2017, we forecast net sales of ¥138.0 billion, operating income of ¥16.3 billion, and net income attributable to owners of parent of ¥11.4 billion.

Cash Flow Prospects for Fiscal 2017

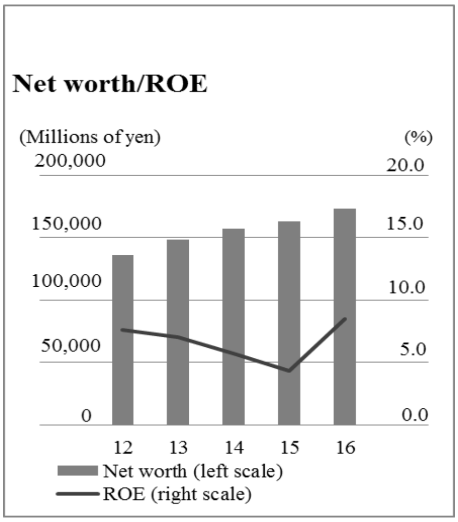
Net cash provided by operating activities is expected to be ¥17.0 billion due to an anticipated decrease in income before income taxes and an anticipated increase in income taxes paid.

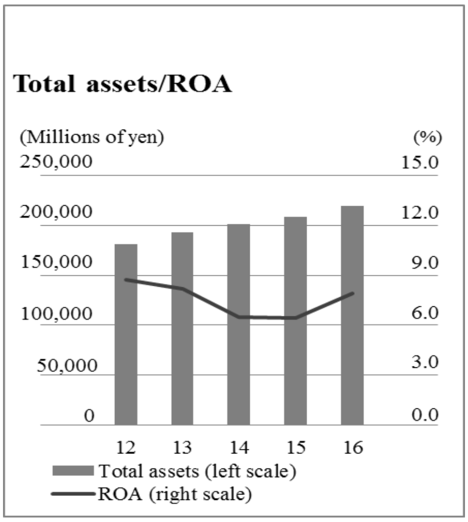
Net cash used in investing activities is expected to total ¥14.0 billion mainly due to purchases of property, plant and equipment.

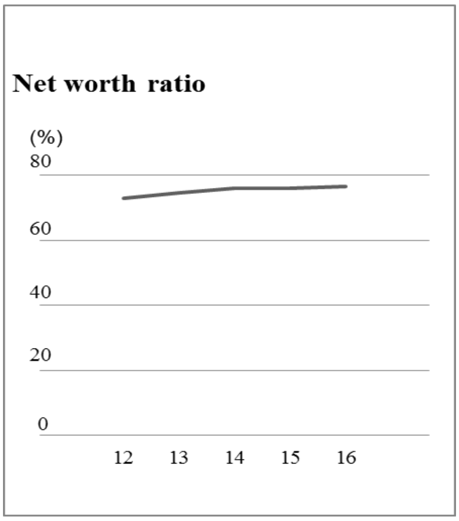
Net cash used in financing activities is expected to total ¥4.0 billion mainly due to dividend payments.

Basic Policy on Shareholder Returns and Dividends for Fiscal 2016 and 2017

Our basic shareholder return policy is to pay stable dividends of ¥20 per share annually, taking into account the performance for the fiscal year in question, the future outlook, and forecast performance figures. However, we also place importance on ensuring a sufficient amount of retained earnings to maintain a sound financial position. We must secure sufficient funding to finance R&D activities and capital investment needed to prepare us for an expected increase in competition.







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For fiscal 2016 ended December 31, 2016, we made a term-end dividend payment of ¥13 per share. As we have already paid an interim dividend of ¥13 per share, the total annual dividend will be ¥26 per share.

For the current term ending December 31, 2017, we are planning an interim dividend payment of ¥13 per share and a term-end payment of the same sum, for an annual dividend of ¥26 per share.

Business Risks

(1) Cost competition

The Group manufactures and sells many products that are difficult to differentiate from those of other companies in terms of their function and performance. Given the present trend of intensifying price competition, there is a possibility that the Group, despite its efforts to strengthen marketing activities and reduce costs, may not be able to maintain its competitive edge over rival companies that are able to sell products with the same qualities at lower prices. This could adversely affect the business performance and financial position of the Group.

(2) Changes in the price of crude oil and naphtha

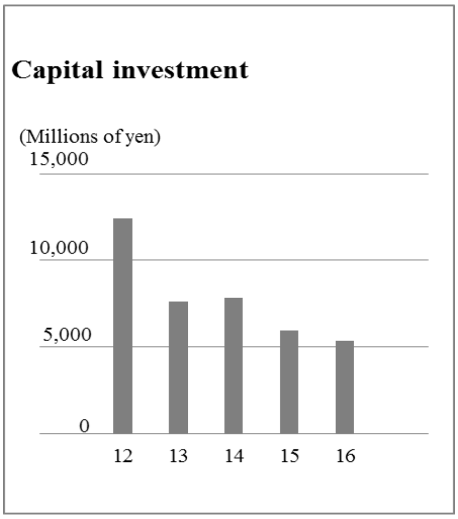
The purchase prices of the major raw materials of products manufactured and sold by the Group are affected by changes in crude oil and naphtha prices. Therefore, if the Group is unable to sufficiently raise its product prices, and/or if the Group is unable to rationalize its operations sufficiently to offset the rising prices of crude oil and naphtha, there is a possibility that the Group's business performance and financial position will be adversely affected.

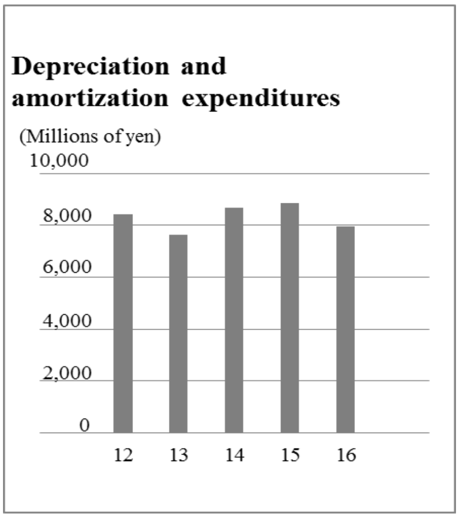
(3) Product liability

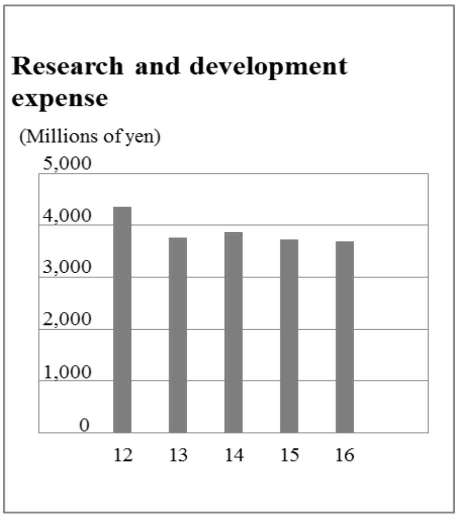
In spite of our efforts to ensure a high level of product quality, there is a possibility that a customer or other party may experience financial losses or other forms of damage as a result of an unexpected defect in products manufactured and sold by the Group. As not all losses incurred will be covered by product liability insurance, this factor may adversely affect the business performance and financial position of the Group.

(4) Impact of natural disasters

The production plants of the Group are located mostly in the Tokai Region of Japan, which is said to be particularly at risk of the occurrence of a major earthquake. If such an earthquake were to occur, substantial losses, including the suspension of operations, could result, and this would adversely affect the business performance and financial position of the Group.







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(5) Major litigation

In the event of a major lawsuit being brought against the Group in the future, there is a possibility that this will adversely affect the Group's business performance and financial position.

(6) Deferred tax assets

The deferred tax assets of the Group are based on an amount that is recorded after judging the potential for collection based on forecasts of future taxable income. If such forecasts deviate significantly from actual results, there is a possibility that this will adversely affect the business performance and financial position of the Group.

(7) Changes in foreign currency exchange rates

For the reporting period, overseas sales of the Group accounted for 16.0% of total sales. The Group includes eight overseas consolidated subsidiaries and one overseas affiliated company subject to the equity method. There is therefore a possibility of a change in exchange rates adversely affecting the business performance and financial position of the Group.

(8) Changes in interest rates

The Group has been raising funds for its business operations and there is a possibility that a change in interest rates will influence the business performance and financial position of the Group.

(9) Application of accounting for the impairment of fixed assets

In line with accounting law in Japan, the Group has applied impairment accounting for fixed assets. As a result, in the event of a significant future decline in market prices of land, and/or a deterioration in the Group's operating environment, there is a possibility of the posting of a substantial impairment loss, which would adversely affect the Group's business performance and financial position.

The Group is fully aware of the risks outlined above, and has measures in place to minimize their impact on operating results and financial position, at the Group and Group company level.

1. [Consolidated Financial Statements and Others]

(1) [Consolidated Financial Statements]

i) [Consolidated Balance Sheets]

(Millions of yen)

December 31,		2015		2016
Assets				
Current assets				
Cash and deposits		15,969		28,966
Notes and accounts receivable	*5	38,699	*5	40,302
Securities		41,000		44,000
Inventories	*1	16,037	*1	14,162
Deferred tax assets		840		956
Other current assets		926		756
Allowance for doubtful receivables		(37)		(33)
Total current assets		113,434		129,110
Fixed assets				
Property, plant and equipment				
Buildings and structures, net		19,317		18,572
Machinery, equipment and other, net		22,868		20,917
Tools, furniture and fixtures, net		1,991		1,884
Land		17,385		17,135
Leased assets, net		134		127
Construction in progress		1,318		1,314
Total property, plant and equipment	*3, *4	63,016	*3, *4	59,953
Intangible fixed assets				
Goodwill		9		—
Leased assets		2		0
Other		477		500
Total intangible fixed assets		488		500
Investments and other assets				
Investment securities	*2	27,344	*2	26,983
Net defined benefit asset		1,673		1,229
Deferred tax assets		60		54
Other assets	*2	2,045	*2	1,703
Allowance for doubtful receivables		(46)		(15)
Total investments and other assets		31,077		29,955
Total fixed assets		94,583		90,409
Total assets		208,018		219,520

See accompanying notes to consolidated financial statements.

(Millions of yen)

December 31,		2015		2016
Liabilities				
Current liabilities				
Notes and accounts payable	*5	13,140	*5	13,729
Short-term bank loans		2,730		2,502
Lease obligations		61		55
Accrued income taxes		2,376		4,142
Accrued bonuses for employees		17		18
Other current liabilities	*5	9,389	*5	9,070
Total current liabilities		27,715		29,519
Long-term liabilities				
Long-term debt		9,963		9,805
Lease obligations		85		81
Deferred tax liabilities		3,116		3,280
Net defined benefit liability		160		158
Other long-term liabilities		3,957		3,671
Total long-term liabilities		17,282		16,997
Total liabilities		44,997		46,517
Net Assets				
Shareholders’ equity				
Common stock		20,886		20,886
Capital surplus		16,799		16,799
Retained earnings		110,489		120,999
Treasury stock		(269)		(278)
Total shareholders’ equity		147,905		158,407
Accumulated other comprehensive income				
Unrealized holding gain on available-for-sale securities		7,898		7,955
Translation adjustments		2,199		1,922
Remeasurements of defined benefit plans		169		(296)
Total accumulated other comprehensive income		10,267		9,582
Non-controlling interests		4,846		5,012
Total net assets		163,020		173,003
Total liabilities and net assets		208,018		219,520

See accompanying notes to consolidated financial statements.

ii) [Consolidated Statements of Income and Consolidated Statements of Comprehensive Income]
[Consolidated Statements of Income]

(Millions of yen)

Years ended December 31,		2015		2016
Net sales		139,848		135,382
Cost of sales	*1	104,420	*1	95,717
Gross profit		35,428		39,665
Selling, general and administrative expenses				
Selling expenses	*2	14,238	*2	14,528
General and administrative expenses	*3, *4	8,841	*3, *4	8,989
Total selling, general and administrative expenses		23,080		23,517
Operating income		12,347		16,147
Non-operating income				
Interest income		65		60
Dividend income		642		760
Equity in earnings of affiliates		328		337
Foreign currency exchange gains		11		—
Rent income on non-current assets		186		92
Miscellaneous income		151		161
Total non-operating income		1,385		1,411
Non-operating expenses				
Interest expenses		111		101
Foreign currency exchange losses		—		95
Inactive facilities expenses		110		97
Environment readiness fee		165		205
Miscellaneous expenses		144		123
Total non-operating expenses		531		623
Ordinary profit		13,201		16,935
Extraordinary gains				
Gain on sales of non-current assets	*5	671	*5	3,685
Gain on sales of investment securities		40		619
Subsidy income		116		10
Total extraordinary gains		828		4,315
Extraordinary losses				
Loss on disposal of non-current assets	*6	340	*6	535
Impairment loss on property, plant and equipment	*7	1,826	*7	19
Total extraordinary losses		2,166		554
Income before income taxes		11,863		20,696
Income taxes -- Current		3,863		5,951
Income taxes -- Deferred		908		522
Total income taxes		4,772		6,473
Net income		7,091		14,223
Net income attributable to non-controlling interests		394		421
Net income attributable to owners of parent		6,696		13,801

See accompanying notes to consolidated financial statements.

[Consolidated Statements of Comprehensive Income]

(Millions of yen)

Years ended December 31,		2015		2016
Net income		7,091		14,223
Other comprehensive income				
Unrealized holding gain on available-for-sale securities		1,649		58
Translation adjustments		(152)		(338)
Remeasurements of defined benefit plans, net of tax		(225)		(466)
Total other comprehensive income	*1	1,271	*1	(746)
Comprehensive income		8,362		13,476
Comprehensive income attributable to:				
Owners of the parent		8,012		13,116
Non-controlling interests		349		360

See accompanying notes to consolidated financial statements.

iii) [Consolidated Statements of Changes in Net Assets]

(Millions of yen)

Year ended December 31, 2015	Shareholders' equity				
	Common stock	Capital surplus	Retained earnings	Treasury stock	Total shareholders' equity
Balance at beginning of the year	20,886	16,798	106,306	(230)	143,760
Cumulative effects of changes in accounting policies			647		647
Restated balance	20,886	16,798	106,953	(230)	144,408
Changes during the year:					
Cash dividends			(3,160)		(3,160)
Net income attributable to owners of parent			6,696		6,696
Purchase of treasury stock				(40)	(40)
Gain on sales of treasury stock		0		1	2
Net changes in items other than shareholders' equity					
Total changes during the year	—	0	3,536	(39)	3,497
Balance at end of the year	20,886	16,799	110,489	(269)	147,905

Year ended December 31, 2015	Accumulated other comprehensive income					
	Unrealized holding gain on available-for-sale securities	Translation adjustments	Remeasurements of defined benefit plans	Total accumulated other comprehensive income	Non-controlling interests	Total net assets
Balance at beginning of the year	6,249	2,306	395	8,951	4,637	157,349
Cumulative effects of changes in accounting policies						647
Restated balance	6,249	2,306	395	8,951	4,637	157,996
Changes during the year:						
Cash dividends						(3,160)
Net income attributable to owners of parent						6,696
Purchase of treasury stock						(40)
Gain on sales of treasury stock						2
Net changes in items other than shareholders' equity	1,648	(106)	(225)	1,316	209	1,525
Total changes during the year	1,648	(106)	(225)	1,316	209	5,023
Balance at end of the year	7,898	2,199	169	10,267	4,846	163,020

See accompanying notes to consolidated financial statements.

(Millions of yen)

Year ended December 31, 2016	Shareholders' equity: Common stock	Capital surplus	Retained earnings	Treasury stock	Total shareholders' equity
Balance at beginning of the year	20,886	16,799	110,489	(269)	147,905
Cumulative effects of changes in accounting policies					—
Restated balance	20,886	16,799	110,489	(269)	147,905
Changes during the year:					
Cash dividends			(3,291)		(3,291)
Net income attributable to owners of parent			13,801		13,801
Purchase of treasury stock				(8)	(8)
Gain on sales of treasury stock		0		0	0
Net changes in items other than shareholders' equity					
Total changes during the year	—	0	10,510	(8)	10,501
Balance at end of the year	20,886	16,799	120,999	(278)	158,407

Year ended December 31, 2016	Accumulated other comprehensive income: Unrealized holding gain on available-for-sale securities	Translation adjustments	Remeasurements of defined benefit plans	Total accumulated other comprehensive income	Non-controlling interests	Total net assets
Balance at beginning of the year	7,898	2,199	169	10,267	4,846	163,020
Cumulative effects of changes in accounting policies						—
Restated balance	7,898	2,199	169	10,267	4,846	163,020
Changes during the year:						
Cash dividends						(3,291)
Net income attributable to owners of parent						13,801
Purchase of treasury stock						(8)
Gain on sales of treasury stock						0
Net changes in items other than shareholders' equity	57	(276)	(466)	(685)	166	(518)
Total changes during the year	57	(276)	(466)	(685)	166	9,982
Balance at end of the year	7,955	1,922	(296)	9,582	5,012	173,003

See accompanying notes to consolidated financial statements.

iv) [Consolidated Statements of Cash Flows]

		(Millions of yen)
Years ended December 31,	2015	2016
Operating activities		
Income before income taxes	11,863	20,696
Depreciation and amortization	8,857	7,965
Impairment losses on property, plant and equipment	1,826	19
Amortization of goodwill	9	9
Decrease in allowance for doubtful receivables	(5)	(3)
Increase (decrease) in other provisions	(20)	1
Increase in net defined benefit asset	(433)	(232)
Increase (decrease) in net defined benefit liability	6	(2)
Interest and dividend income	(707)	(820)
Interest expense	111	101
Foreign currency exchange gain	0	46
Gain on sales of investment securities	(40)	(619)
Equity in earnings of affiliates	(328)	(337)
Gain on sales of non-current assets	(671)	(3,685)
Subsidy income	(116)	(10)
Loss on disposal of non-current assets	340	535
Decrease (increase) in receivables	3,679	(1,652)
Decrease (increase) in inventories	1,427	1,784
Increase (decrease) in payables	(2,554)	596
Other, net	308	861
Subtotal	23,553	25,250
Interest and dividends received	1,088	1,087
Interest paid	(116)	(101)
Subsidy income received	316	90
Income taxes paid	(1,528)	(4,338)
Net cash provided by operating activities	23,313	21,989
Investing activities		
Increase in time deposits	(664)	(6,857)
Net decrease (increase) in securities	—	(9,000)
Purchases of investment securities	(9)	(10)
Proceeds from sales of investment securities	346	822
Purchases of property, plant and equipment	(4,655)	(6,348)
Proceeds from sales of property, plant and equipment	1,116	4,566
Other, net	(725)	(846)
Net cash used in investing activities	(4,592)	(17,673)

See accompanying notes to consolidated financial statements.

(Millions of yen)

Years ended December 31,		2015		2016
Financing activities				
Repayment of long-term debt		(541)		(386)
Proceeds from sales of treasury stock		2		0
Purchases of treasury stock		(40)		(8)
Repayment of lease obligations		(71)		(66)
Cash dividends to shareholders		(3,158)		(3,284)
Cash dividends paid to non-controlling interests		(140)		(194)
Net cash used in financing activities		(3,949)		(3,939)
Effect of exchange rate changes on cash and cash equivalents		(79)		(122)
Net increase (decrease) in cash and cash equivalents		14,691		254
Cash and cash equivalents at beginning of the year		39,285		53,977
Cash and cash equivalents at end of the year	*1	53,977	*1	54,231

See accompanying notes to consolidated financial statements.

[Notes]

(Basis for Preparation of Consolidated Financial Statements)

1. Scope of consolidation

(1) Consolidated subsidiaries: 20

Consolidated subsidiaries are shown in “4. Information on Subsidiaries and Affiliates” under “I. Overview of the Company.”

Effective from the current fiscal year, Toagosei (Thailand) Co., Ltd. is included in the scope of consolidation because it was newly incorporated.

(2) Unconsolidated subsidiaries: 3

A major unconsolidated subsidiary is Toa Kenso Co., Ltd. The unconsolidated subsidiaries have an immaterial effect on the Company’s consolidated financial statements as a whole in terms of the sum of total assets, the sum of net sales, the sum of net income/loss, and the sum of retained earnings.

2. Application of equity method

(1) Unconsolidated subsidiaries and affiliates which are accounted for by the equity method

Affiliates: 1 Partnership: 1

Chubu Liquid Oxygen Co., Ltd.

Elmer’s & Toagosei Co.

(2) Unconsolidated subsidiaries and affiliates which are not accounted for by the equity method

Unconsolidated subsidiaries: 3

Affiliates: 10

Toyo Denka Kogyo Co., Ltd.

(3) Reason for exclusion from application of equity method accounting:

Because the effect of their net income/loss and retained earnings on the Company’s consolidated financial statements is immaterial and they are not important as a whole in accounting terms.

3. Fiscal year-end of consolidated subsidiaries

The fiscal year-end of consolidated subsidiaries is the same as the Company’s consolidated fiscal year-end.

4. Accounting policies

(1) Basis and method for valuation of major assets

1) Securities

Available-for-sale securities

Marketable securities classified as available-for-sale securities

Marketable securities classified as available-for-sale securities are carried at fair value determined based on the average of quoted prices (or their equivalent) in the one-month period prior to the balance sheet date with changes in unrealized holding gain or loss, net of the applicable income taxes, included directly in net assets.

Non-marketable securities classified as available-for-sale securities

Non-marketable securities classified as available-for-sale securities are carried at cost. Cost of securities sold is determined by the moving average method.

2) Derivative

Derivative financial instruments are carried at fair value.

3) Inventories

Inventories are stated at the lower of cost or net selling value, cost being determined by the moving average method. (The balance sheet amounts are written down if there is any decrease in profitability.)

(2) Depreciation and amortization of major depreciable and amortizable assets

1) Property, plant and equipment (excluding leased assets)

Depreciation of property, plant and equipment is calculated by the straight-line method based on the estimated useful lives of the respective assets and their residual value.

The useful lives for major property, plant and equipment are as follows:

Buildings and structures	2–75 years
Machinery, equipment and other	2–17 years
Tools, furniture and fixtures	2–20 years

2) Intangible fixed assets (excluding leased assets)

Amortization of intangible fixed assets, primarily consisting of software, is calculated by the straight-line method based on the estimated useful lives of the respective assets in this category (5 years for software).

3) Leased assets (leased assets relating to finance lease transactions that do not transfer ownership)

Depreciation of leased assets shall be calculated based on the assumption that the useful lives equal the lease term and the residual value is zero.

(3) Posting standards for providing major allowance

1) Allowance for doubtful receivables

The allowance for bad debts and doubtful receivables in respect of individual bad debts is provided in an amount sufficient to cover credit losses based on the collectability of individual receivables. The allowance for receivables other than those described above is based on past credit loss experience.

2) Accrued bonuses for employees

Accrued bonuses for employees are provided at the estimated amounts expected to be paid to employees for one consolidated subsidiary.

(4) Accounting methods relating to retirement benefits

1) Periodic allocation of estimated retirement benefits

In calculating retirement benefit obligation, the benefit formula basis is applied for allocation of projected retirement benefit to the periods until the end of the current fiscal year.

2) Amortization of actuarial gain or loss and prior service costs

Actuarial gain or loss of the Company is amortized in the year following the year in which the gain or loss is recognized by the straight-line method over the average remaining years of service of the eligible employees (primarily 10 years) when incurred in each fiscal year.

Prior service costs are expensed using the straight-line method over the average remaining years of service of the eligible employees (primarily 10 years) when incurred.

3) Adoption of the simplified method in SMEs

In calculating net defined benefit liability and retirement benefit expenses, some consolidated subsidiaries adopt the simplified method where the projected benefit obligation is an estimated amount of retirement benefits, assuming that all employees terminate their services on the balance sheet date for their own convenience.

(5) Foreign currency translation

Receivables and payables in foreign currencies are translated into yen at the rates of exchange in effect at the balance sheet date, and the resulting translation gain or loss is charged or credited to income.

Assets and liabilities of the foreign consolidated subsidiaries are translated at the same exchange rates. Revenue and expense accounts of the foreign consolidated subsidiaries are translated at periodical average rates during the fiscal year. The resulting translation gain or loss is included in “Translation adjustments” and “Non-controlling interests” under “Net assets.”

(6) Method and period for amortization of goodwill
Goodwill is amortized over a five-year period after the accrual date, with the exception of minor amounts charged or credited to income.

(7) Scope of funds in the consolidated statements of cash flows
Funds (cash and cash equivalents) in the consolidated statements of cash flows comprise cash on hand, bank deposits available for withdrawal on demand and readily available short-term investments with maturities of three months or less, which are exposed to minor risk of fluctuation in value.

(8) Other important items concerning the preparation of consolidated financial statements
Consumption taxes and others
Consumption taxes are excluded from the transaction accounts.

(Changes in accounting policy)

Application of the accounting standards, etc. for business combinations

The Accounting Standard for Business Combinations (ASBJ Statement No. 21 issued on September 13, 2013; hereinafter the “Accounting Standard for Business Combinations”), the Accounting Standard for Consolidated Financial Statements (ASBJ Statement No. 22 issued on September 13, 2013; hereinafter the “Accounting Standard for Consolidated Financial Statements”), and the Accounting Standard for Business Divestitures (ASBJ Statement No. 7 issued on September 13, 2013; hereinafter, the “Accounting Standard for Business Divestitures”), etc. have been applied, effective from the current fiscal year. Accordingly, the Company’s accounting policies have been changed, whereby the differences arising from changes in the Company’s equity in a subsidiary over which the Company retains control are recorded in capital surplus and acquisition-related costs are expensed in the fiscal year of incurrence. In addition, for business combinations performed from the beginning of the current fiscal year, changes have been made whereby adjustments to the provisional amount arising from the finalization of the tentative accounting treatment relating to the allocation of acquisition cost are recognized in the consolidated financial statements for the period in which the business combination occurs. In addition, the Company has changed the presentation of net income and other related items, and the presentation of “minority interests” to “non-controlling interests.” To reflect this change in presentation, a reclassification of accounts has been made to the consolidated financial statements for the previous fiscal year.

The Accounting Standard for Business Combinations, etc., were adopted in accordance with the transitional treatments provided for in Paragraph 58-2 (4) of the Accounting Standard for Business Combinations, Paragraph 44-5 (4) of the Accounting Standard for Consolidated Financial Statements, and Paragraph 57-4 (4) of the Accounting Standard for Business Divestitures, and they have been prospectively adopted from the beginning of the current fiscal year.

In the consolidated statements of cash flows for the current fiscal year, cash flows relating to the purchase or sales of investments in subsidiaries not resulting in a change in the scope of consolidation are shown in the “net cash provided by (used in) financing activities” section, while cash flows relating to expenses associated with the purchase of investments in subsidiaries resulting in a change in the scope of consolidation and expenses associated with the purchase or sales of investments in subsidiaries not resulting in a change in the scope of consolidation are shown in the “net cash provided by (used in) operating activities” section.

There was no impact on consolidated financial statements and information per share of common stock for the current fiscal year.

(Accounting Standards Issued but Not Yet Effective)

Implementation guidance on recoverability of deferred tax assets

“Implementation Guidance on Recoverability of Deferred Tax Assets” (ASBJ Guidance No. 26 issued on March 28, 2016)

(1) Outline

While the existing framework shown in “the auditing treatment on determining the recoverability of deferred tax assets” (the JICPA Audit Committee Report No. 66), a framework that groups companies into five classifications and estimates the amounts of deferred tax assets according

to the classifications, has been principally adhered to as before, the treatments and requirements listed below have been examined and revised with respect to the treatments of recoverability of deferred tax assets:
(i) the treatment of companies that do not meet any of the classification requirements for (Classification 1) through (Classification 5)
(ii) the classification requirements for (Classification 2) and (Classification 3)
(iii) the treatment of a deductible temporary difference that is impossible to schedule at companies that fall under (Classification 2)
(iv) the treatment of a reasonably estimable period for taxable income before reflecting deductible/taxable temporary differences, etc. at companies that fall under (Classification 3)
(v) the treatment of a company that meets the requirements for (Classification 4) and also falls under (Classification 2) or (Classification 3)
(2) Planned effective date
The Company expects to apply the above guidance from beginning of the fiscal year ending December 31, 2017.
(3) Effect of the application of the above guidance on financial statements
The Company is in the process of measuring the effects at the time of preparation of the consolidated financial statements.

(Changes in Presentation)
(Notes to Consolidated Balance Sheets)
"Income taxes receivable," which was listed separately under "Current assets" in the previous fiscal year, has been included in "Other current assets" effective from the current fiscal year, due to the decrease in the monetary significance of "Income taxes receivable." To reflect this change in presentation, the consolidated financial statements for the previous fiscal year have been reclassified.
As a result, "Income taxes receivable" of ¥107 million and "Other current assets" of ¥819 million, both of which were presented under "Current assets" on the consolidated balance sheets for the previous fiscal year, have been reclassified into "Other current assets" in the amount of ¥926 million.

(Notes to Consolidated Statements of Cash Flows)
"Purchase of long-term prepaid expenses," which was listed separately under "Investing activities" in the previous fiscal year, has been included in "Other, net" effective from the current fiscal year, due to the decrease in the monetary significance of "Purchase of long-term prepaid expenses." To reflect this change in presentation, the consolidated financial statements for the previous fiscal year have been reclassified.
As a result, "Purchase of long-term prepaid expenses" of negative ¥580 million and "Other, net" of negative ¥144 million, both of which were presented under "Investing activities" on the consolidated statements of cash flows for the previous fiscal year, have been reclassified into "Other, net" in the amount of negative ¥725 million.

(Notes to Consolidated Balance Sheets)
*1. Components of inventories:

(Millions of yen)

December 31,	2015	2016
Merchandise and finished products (including semi-finished products)	10,911	9,583
Work in process	307	348
Raw materials and supplies	4,818	4,230
Total	16,037	14,162

*2. Investments in unconsolidated subsidiaries and affiliates were as follows:

(Millions of yen)

December 31,	2015	2016
Investment securities (stocks)	2,211	2,219
Other (investments and other assets)	169	228

*3. Assets pledged as collateral:
December 31, 2015

Assets pledged as collateral		
Classification	Book value (Millions of yen)	Type of security interests
Buildings and structures	6,352	Plant foundation
Machinery, equipment and other	5,550	ditto
Tools, furniture and fixtures	456	ditto
Land	4,136	ditto
Total	16,496	

(Note) The assets described above are pledged as collateral, but there are no corresponding secured obligations.

December 31, 2016

Assets pledged as collateral		
Classification	Book value (Millions of yen)	Type of security interests
Buildings and structures	6,208	Plant foundation
Machinery, equipment and other	5,504	ditto
Tools, furniture and fixtures	575	ditto
Land	4,136	ditto
Total	16,425	

(Note) The assets described above are pledged as collateral, but there are no corresponding secured obligations.

*4. Accumulated depreciation of property, plant and equipment:

(Millions of yen)

December 31,	2015	2016
	178,699	182,103

*5. Notes matured at the balance sheet date and cash settlement payable as of the balance sheet date (method of cash settlement payable at due date with the same terms as notes) are treated as if they were settled on the maturity date. Because the balance sheet date of the current fiscal year fell on a holiday for financial institutions, the notes matured and cash settlement payable at the balance sheet date were excluded from the balance as of the end of the current fiscal year.

(Millions of yen)

December 31,	2015	2016
Notes and accounts receivable	4,705	4,264
Notes and accounts payable	1,859	1,587
Other (Current liabilities)	546	379

6. Contingent liabilities and secured liabilities:

(Millions of yen)

December 31,		2015	2016
Employees	Guarantees against loans from financial institutions	186	234
Hokuriku Liquid Oxygen Co., Ltd.	ditto	6	1
Total		192	235

(Notes to Consolidated Statements of Income)

*1. Inventories as at the fiscal year-end represent the book value written-down due to a decrease in profitability. The following losses on devaluation of inventories were included in cost of sales (the amount stated is the amount after offset by reversal):

Years ended	(Millions of yen)	
December 31,	2015	2016
	(93)	(318)

*2. Major items of selling expenses:

Years ended	(Millions of yen)	
December 31,	2015	2016
Transportation expenses	7,717	7,708
Salaries	2,003	1,920
Bonuses	785	772
Retirement benefit expenses	134	139
Depreciation and amortization	117	134

*3. Major items of general and administrative expenses:

Years ended	(Millions of yen)	
December 31,	2015	2016
Salaries	2,271	2,279
Bonuses	1,066	1,078
Retirement benefit expenses	222	231
Depreciation and amortization	816	732
Amortization of goodwill	9	9

*4. Research and development cost included in general and administrative expenses and manufacturing cost:

Years ended	(Millions of yen)	
December 31,	2015	2016
	3,720	3,690

*5. Components of gain on sales of non-current assets:

Years ended	(Millions of yen)	
December 31,	2015	2016
Land, etc.	671	3,685

*6. Components of loss on disposal of non-current assets:

Years ended	(Millions of yen)	
December 31,	2015	2016
Machinery, equipment and other	117	55
Disposal costs	95	432
Buildings and structures, etc.	127	47

*7. Impairment loss:

Year ended December 31, 2015

The Company and its consolidated subsidiaries have recognized impairment losses on the following classes of assets:

Location	Major use	Category	Impairment loss (Millions of yen)
Singapore	Facilities for manufacturing acrylic esters, etc.	Long-term prepaid expenses and machinery, etc.	1,678
Ryugasaki city, Ibaraki	Company owned houses	Land and buildings	144
Tsukuba city, Ibaraki	Idle assets	Land	3
Total			1,826

(Outline and grouping method)

The Company and its consolidated subsidiaries have grouped business-use assets according to the minimum independent cash-flow-generating unit and have grouped idle assets according to their respective units.

The Company wrote down the book values of certain acrylic esters production facilities that experienced drops in profitability to their respective recoverable amounts. In addition, the Company wrote down the book values of certain company owned houses and idle assets that the Company ceased to use as company owned houses, etc. and decided to sell, to their respective recoverable amounts. Accordingly, ¥1,826 million of impairment losses were recognized in the statement of income.

(Components of impairment loss)

The impairment losses consisted of ¥1,213 million for long-term prepaid expenses, ¥455 million for machinery, ¥111 million for buildings, ¥36 million for land, and ¥9 million for other.

(Calculation of recoverable amounts, etc.)

For facilities for manufacturing acrylic esters, etc., the recoverable amounts applicable to assets for which impairment losses were recognized for the corresponding year ended December 31, 2015 were measured using the utility value and evaluated at the memorandum value because future cash flows were negative. Assets that the Company decided to sell were calculated using the estimated sales value.

Year ended December 31, 2016

The Company and its consolidated subsidiaries have recognized impairment losses on the following classes of assets:

Location	Major use	Category	Impairment loss (Millions of yen)
Tsukuba city, Ibaraki	Idle assets	Land and buildings	19

(Outline and grouping method)

The Company and its consolidated subsidiaries have grouped business-use assets according to the minimum independent cash-flow-generating unit and have grouped idle assets according to their respective units.

Because the Company sold the idle assets (land and buildings, etc.) that had not been utilized for business purposes, the Company wrote down the book values of the idle assets to their sales values. Accordingly, ¥19 million of impairment losses were recognized in the statement of income.

(Components of impairment loss)

The impairment losses consisted of ¥19 million for land and buildings.

(Calculation of recoverable amounts, etc.)

The recoverable amounts applicable to the assets for which impairment losses were recognized for the corresponding year ended December 31, 2016 were calculated using the sales value.

(Notes to Consolidated Statements of Comprehensive Income)

*1. Reclassification adjustment and tax effect of other comprehensive income:

Years ended December 31,	2015	2016
	(Millions of yen)	
Unrealized holding gain on available-for-sale securities		
Amount arising during the fiscal year	1,972	440
Reclassification adjustment	(4)	(619)
Amount before tax effect	1,968	(178)
Tax effect	(319)	236
Unrealized holding gain on available-for-sale securities	1,649	58
Translation adjustments		
Amount arising during the fiscal year	(152)	(338)
Amount before tax effect	(152)	(338)
Tax effect	—	—
Translation adjustments	(152)	(338)
Remeasurements of defined benefit plans, net of tax		
Amount arising during the fiscal year	(401)	(759)
Reclassification adjustment	38	83
Amount before tax effect	(363)	(676)
Tax effect	137	210
Remeasurements of defined benefit plans, net of tax	(225)	(466)
Total other comprehensive income	1,271	(746)

(Notes to Consolidated Statements of Changes in Net Assets)

Year ended December 31, 2015

1. Matters related to the type and total number of issued shares and the type and total number of shares of treasury stock:

(Thousands of shares)

Type of shares	Number of shares at beginning of the year	Increase in the number of shares in the year	Decrease in the number of shares in the year	Number of shares at end of the year
Issued shares				
Common stock (Note 1)	263,992	—	131,996	131,996
Total	263,992	—	131,996	131,996
Treasury stock				
Common stock (Notes 2, 3)	617	69	341	345
Total	617	69	341	345

(Notes) 1. The decrease in the number of issued shares (common stock) is due to a two-for-one reverse stock split effective on July 1, 2015.
2. The increase in the number of treasury stock (common stock) is mainly due to purchase of less-than-one-unit shares.
3. The decrease in the number of treasury stock (common stock) is due to a two-for-one reverse stock split effective on July 1, 2015 and sales of less-than-one-unit shares.

2. Matters related to dividends

(1) Amount of dividends paid

Resolution	Type of shares	Gross amount (Millions of yen)	Dividend per share (Yen)	Record date	Effective date
March 27, 2015 102nd Annual Shareholders' Meeting (Note 1)	Common stock	1,580	6.00	December 31, 2014	March 30, 2015
July 30, 2015 Board of Directors (Note 2)	Common stock	1,579	6.00	June 30, 2015	September 4, 2015

(Notes) 1. The ¥6.00 dividend per share includes a commemorative dividend of ¥1.00 for the 70th anniversary of foundation.
2. Dividend per share is described at an amount before the reverse stock split implemented on July 1, 2015 because the record date was June 30, 2015.

(2) Dividends whose record date was in the year ended December 31, 2015 but whose effective date was in the year ended December 31, 2016

Resolution	Type of shares	Gross amount (Millions of yen)	Source of dividends	Dividend per share (Yen)	Record date	Effective date
March 30, 2016 103rd Annual Shareholders' Meeting	Common stock	1,579	Retained earnings	12.00	December 31, 2015	March 31, 2016

Year ended December 31, 2016

1. Matters related to the type and total number of issued shares and the type and total number of shares of treasury stock:

(Thousands of shares)

Type of shares	Number of shares at beginning of the year	Increase in the number of shares in the year	Decrease in the number of shares in the year	Number of shares at end of the year
Issued shares				
Common stock	131,996	—	—	131,996
Total	131,996	—	—	131,996
Treasury stock				
Common stock (Notes 1, 2)	345	8	0	353
Total	345	8	0	353

(Notes) 1. The increase in the number of treasury stock (common stock) is due to purchase of less-than-one-unit shares.

2. The decrease in the number of treasury stock (common stock) is due to sales of less-than-one-unit shares.

2. Matters related to dividends

(1) Amount of dividends paid

Resolution	Type of shares	Gross amount (Millions of yen)	Dividend per share (Yen)	Record date	Effective date
March 30, 2016 103rd Annual Shareholders' Meeting	Common stock	1,579	12.00	December 31, 2015	March 31, 2016
July 29, 2016 Board of Directors	Common stock	1,711	13.00	June 30, 2016	September 6, 2016

(2) Dividends whose record date was in the year ended December 31, 2016 but whose effective date is in the year ending December 31, 2017

Resolution	Type of shares	Gross amount (Millions of yen)	Source of dividends	Dividend per share (Yen)	Record date	Effective date
March 30, 2017 104th Annual Shareholders' Meeting	Common stock	1,711	Retained earnings	13.00	December 31, 2016	March 31, 2017

(Notes to Consolidated Statements of Cash Flows)

*1. Reconciliation of the balance of cash and cash equivalents in the consolidated statement of cash flows to cash and deposits included in the consolidated balance sheet:

(Millions of yen)

Years ended December 31,	2015	2016
Cash and deposits	15,969	28,966
Securities	41,000	44,000
Time deposits with terms in excess of 3 months	(2,991)	(9,734)
Negotiable certificate of deposit with terms in excess of 3 months	—	(9,000)
Cash and cash equivalents	53,977	54,231

(Lease Transactions)

1. Finance leases (lessee)

Finance lease transactions that do not transfer ownership

1) Leased assets

Property, plant and equipment

Consists of buildings and structures, machinery, equipment and other, and tools, furniture and fixtures

Intangible fixed assets

Software

2) Depreciation of leased assets

As described in "4. Accounting policies (2) Depreciation and amortization of major depreciable and amortizable assets."

2. Operating leases

Future minimum lease payments under noncancelable operating leases:

(Millions of yen)

December 31,	2015	2016
Due within one year	21	20
Due after one year	6	4
Total	27	25

(Impairment loss)

No impairment loss is allocated to leased assets.

(Financial Instruments)

1. Matters related to the status of financial instruments

(1) Policies on financial instruments

When managing surplus funds, the Group limits the application of such funds to highly secure financial assets, mainly short-term bank deposits, and it procures funds mainly through bank borrowings. Derivative transactions are used to hedge interest fluctuation risk present in borrowings, but are not used for speculative or trading purposes.

(2) Description of financial instruments and associated risks

Notes and accounts receivable, which represent trade receivables, are exposed to client-based credit risk. Furthermore, foreign currency denominated trade receivables are also subject to exchange rate fluctuation risks. In order to counter such risk, foreign currency borrowings are used when necessary as a means of hedging the net position of foreign currency denominated trade payables. Securities and investment securities are primarily negotiable certificate of deposits, held-to-maturity securities and shares related to businesses, and are thus exposed to risk stemming from fluctuations in market value.

Notes and accounts payable, which represent trade payables, are due within one year. A portion of these are foreign currency denominated items related to payment for raw material imports, which are subject to exchange rate fluctuation risk. These are constantly maintained within the balance of receivables denominated in the same foreign currencies. Borrowings are used to procure funds necessary for operational transactions and capital expenditures. A portion of these borrowings bearing variable interest rates are exposed to interest rate fluctuation risk. Derivative transactions (interest rate swap transactions) are used as a means of hedging.

(3) Risk management systems related to financial instruments

1) Management of credit risk (risk associated with non-performance of a contract by a business partner etc.)

The departments in charge of Company operations regularly monitor the trade receivable status of all business partners in accordance with the Regulations on Selling in order to identify business partner-based credit risk associated with the deterioration of financial circumstances or other causes at an early stage and reduce it. In case of the consolidated subsidiaries, their divisions or accounting departments also manage the financial and credit status of their business partners pursuant to their own regulations. Derivative transactions are entered into only with highly rated financial institutions.

The maximum credit risk value as of the date of closing of consolidated accounts for the current term is expressed by the value of financial assets in the consolidated balance sheet which are subject to credit risk.

2) Management of market risk (risk associated with exchange rate and interest rate fluctuations)

When necessary, the Company uses borrowings denominated in foreign currencies to hedge its foreign currency denominated trade receivables and trade payables. Interest rate swaps are used to reduce risk associated with fluctuations in interest expenses related to borrowings.

The Company regularly confirms the fair value of securities and investment securities and the financial condition of the issuers (its business partners) and continually reviews its shareholdings with a view to maintaining and strengthening comprehensive relations with its business partners and in consideration of the economic rationality of holding their shares.

Derivative transactions are individually approved by the director of finance and accounting before being entered into by the finance and accounting department, and their position and profit/loss situation are managed regularly.

3) Management of liquidity risk associated with procuring funds (the risk of being unable to execute a payment on the due date)

The Company and its consolidated subsidiaries have formulated cash flow management plans and manage liquidity risk by, for example, keeping a certain amount of cash reserves on hand.

(4) Supplementary information regarding the fair value of financial instruments

The fair value of financial instruments consists of their market price-based value, and, if a market price is not available, their logically calculated value. Variable factors are incorporated into the calculations of the fair value, and different fair values are possible depending on the differing assumptions used.

2. Fair value of financial instruments

The fair value and carrying value of financial instruments and the difference between both values are shown below. Financial instruments whose fair value is extremely difficult to determine, are not included in the table below. (Please refer to Note 2.)

(Millions of yen)

December 31, 2015	Carrying value	Fair value	Difference
(1) Cash and deposits	15,969	15,969	—
(2) Notes and accounts receivable	38,699	38,699	—
(3) Securities and investment securities:			
Available-for-sale securities	65,371	65,371	—
Total assets	120,039	120,039	—
(1) Notes and accounts payable	13,140	13,140	—
(2) Short-term bank loans	2,730	2,730	—
(3) Long-term debt	9,963	10,079	116
Total liabilities	25,834	25,950	116

(Millions of yen)

December 31, 2016	Carrying value	Fair value	Difference
(1) Cash and deposits	28,966	28,966	—
(2) Notes and accounts receivable	40,302	40,302	—
(3) Securities and investment securities:			
Available-for-sale securities	68,002	68,002	—
Total assets	137,271	137,271	—
(1) Notes and accounts payable	13,729	13,729	—
(2) Short-term bank loans	2,502	2,502	—
(3) Long-term debt	9,805	9,955	150
Total liabilities	26,037	26,188	150

(Note 1)
Valuation method of financial instruments and matters related to securities

Assets

(1) Cash and cash equivalents, and (2) Notes and accounts receivable

As all of these are settled within a short span of time, the fair value is virtually identical to the carrying value. Therefore, the carrying value is used.

(3) Securities and investment securities

In the case of the fair value of securities and investment securities, shares are stated at the exchange-listed price and securities are stated at the exchange-listed price or the price quoted by the correspondent financial institution. In the case of those available-for-sale securities which are settled within a short span of time, the fair value is virtually identical to the carrying value. Therefore, the carrying value is used. With regard to notes to securities by purpose of holding, please refer to the note entitled “Securities.”

Liabilities

(1) Notes and accounts payable, and (2) Short-term bank loans

As all of these are settled within a short span of time, the fair value is virtually identical to the carrying value. Therefore, the carrying value is used.

(3) Long-term debt

The fair value of long-term debt is calculated as the present value by discounting the total principal and interest on the borrowings by the interest rate which would be assumed if new, similar borrowings were made.

(Note 2)
Financial instruments whose fair value is extremely difficult to determine:

(Millions of yen)

December 31,	2015	2016
Investments in subsidiaries and affiliates		
Investments in unconsolidated subsidiaries and affiliates	2,211	2,219
Available-for-sale securities:		
Unlisted securities	761	761
Total	2,972	2,981

It is extremely difficult to determine the fair value of these items, as they do not have market prices and future cash flow cannot be estimated. Therefore, they are not included in “Assets: (3) Securities and investment securities.”

(Note 3)
The redemption schedule for monetary claims, held-to-maturity securities and available-for-sale securities with maturities subsequent to the consolidated balance sheet date:

(Millions of yen)

December 31, 2015	1 year or less	Over 1 year to 5 years	Over 5 years to 10 years	Over 10 years
Cash equivalents	15,969	—	—	—
Notes and accounts receivable	38,699	—	—	—
Securities and investment securities:				
Available-for-sale securities with maturities (negotiable certificate of deposit)	41,000	—	—	—
Total	95,668	—	—	—

(Millions of yen)

December 31, 2016	1 year or less	Over 1 year to 5 years	Over 5 years to 10 years	Over 10 years
Cash equivalents	28,960	—	—	—
Notes and accounts receivable	40,302	—	—	—
Securities and investment securities:				
Available-for-sale securities with maturities (negotiable certificate of deposit)	44,000	—	—	—
Total	113,263	—	—	—

(Note 4)
The repayment schedule for long-term debt, lease obligations, and other interest-bearing debt subsequent to the consolidated balance sheet date:

(Millions of yen)

December 31, 2015	1 year or less	Over 1 year to 2 years	Over 2 years to 3 years	Over 3 years to 4 years	Over 4 years to 5 years	Over 5 years
Short-term bank loans	2,344	—	—	—	—	—
Long-term debt	386	158	4,158	158	158	5,331
Lease obligations	61	40	22	11	6	4
Total	2,791	198	4,180	169	164	5,335

(Millions of yen)

December 31, 2016	1 year or less	Over 1 year to 2 years	Over 2 years to 3 years	Over 3 years to 4 years	Over 4 years to 5 years	Over 5 years
Short-term bank loans	2,344	—	—	—	—	—
Long-term debt	158	4,158	158	158	4,558	773
Lease obligations	55	34	23	14	6	2
Total	2,558	4,192	181	172	4,564	775

(Securities)

1. Marketable securities classified as available-for-sale securities:

(Millions of yen)

December 31, 2015	Type	Carrying value	Acquisition cost	Unrealized gain (loss)
Securities whose carrying value exceeds their acquisition cost	(1) Stock	23,424	11,909	11,515
Securities whose acquisition cost exceeds their carrying value	(1) Stock	946	1,013	(67)
	(2) Other	41,000	41,000	—
	Subtotal	41,946	42,013	(67)
Total		65,371	53,922	11,448

(Millions of yen)

December 31, 2016	Type	Carrying value	Acquisition cost	Unrealized gain (loss)
Securities whose carrying value exceeds their acquisition cost	(1) Stock	22,329	11,022	11,307
Securities whose acquisition cost exceeds their carrying value	(1) Stock	1,672	1,709	(37)
	(2) Other	44,000	44,000	—
	Subtotal	45,672	45,709	(37)
Total		68,002	56,732	11,270

2. Marketable securities classified as available-for-sale securities sold during the fiscal year ended:

December 31, 2015 (Millions of yen)

Classification	Sales amount	Total gain on sales	Total loss on sales
Stock	346	40	—

December 31, 2016 (Millions of yen)

Classification	Sales amount	Total gain on sales	Total loss on sales
Stock	820	619	—

3. Other securities for which impairment loss was recognized:
   No impairment loss on investment securities was recognized for the current fiscal year.
   In the accounting for impairment, an impairment loss is recognized for all securities of which the fair values as of the consolidated balance sheet date decline more than 50% from the acquisition cost, and at an amount deemed necessary for securities of which the fair values as of the same date decline between 30% and 50% in consideration of recoverability and other factors.

(Retirement Benefit Plans)

1. Outline of adopted retirement benefit plans for employees
The Company and its consolidated subsidiaries adopt a defined benefit plan and a defined contribution plan, either funded or unfunded, to provide for retirement benefits for employees.
Under defined benefit corporate pension plans (all the plans are funded), a lump-sum or annuity is paid based on accumulated points according to a qualification grade.
Under defined contribution pension plans, a premium calculated by the qualification grade is expensed when contributed.
Under retirement lump-sum payment plans (consisting of funded plans and unfunded plans), salaries and lump-sum payments based on length of service are paid as retirement benefits.
In addition, under the retirement lump-sum payment plans adopted by some of the consolidated subsidiaries, net defined benefit liability and retirement benefit expenses are calculated in accordance with the simplified plan.

2. Defined benefit plan
(1) Reconciliation of opening and closing balance of retirement benefit obligation (excluding plans using the simplified method)

	(Millions of yen)	
Years ended December 31,	2015	2016
Balance of retirement benefit obligation at beginning of year	10,251	10,164
Cumulative effects of changes in accounting policies	(1,003)	—
Restated balance	9,248	10,164
Service cost	456	491
Interest cost	92	58
Actuarial gain or loss	553	761
Retirement benefits paid	(186)	(211)
Balance of retirement benefit obligation at end of year	10,164	11,266

(2) Reconciliation of opening and closing balance of plan assets (excluding plans using the simplified method)

	(Millions of yen)	
Years ended December 31,	2015	2016
Balance of plan assets at beginning of year	10,851	11,837
Expected return on plan assets	108	118
Actuarial gain or loss	152	2
Contribution from employer	911	748
Retirement benefits paid	(186)	(211)
Balance of plan assets at end of year	11,837	12,495

(3) Reconciliation of opening and closing balance of net defined benefit liability under the plans using the simplified method

	(Millions of yen)	
Years ended December 31,	2015	2016
Balance of net defined benefit liability at beginning of year	154	160
Retirement benefit expenses	15	12
Retirement benefits paid	(2)	(10)
Contribution to plan	(4)	(4)
Other	(1)	(1)
Balance of net defined benefit liability at end of year	160	158

(4) Reconciliation of the ending balance of retirement benefit obligations and plan assets and the net defined benefit liability and the net defined benefit asset included in the consolidated balance sheets

	(Millions of yen)	
December 31,	2015	2016
Funded retirement benefit obligations	10,374	11,484
Plan assets	(11,949)	(12,608)
	(1,575)	(1,124)
Unfunded projected benefit obligations	62	52
Net amount of relevant liabilities and assets on the consolidated balance sheets	(1,512)	(1,071)
Net defined benefit liability	160	158
Net defined benefit asset	(1,673)	(1,229)
Net amount of relevant liabilities and assets on the consolidated balance sheets	(1,512)	(1,071)

(Note) Includes the plans using the simplified method.

(5) Retirement benefit expenses and components thereof

	(Millions of yen)	
Years ended December 31,	2015	2016
Service cost	456	491
Interest cost	92	58
Expected return on plan assets	(108)	(118)
Amortization of actuarial gain or loss	91	136
Amortization of prior service cost	(53)	(53)
Retirement benefit expenses calculated using the simplified method	15	12
Retirement benefit expenses related to the defined benefit plan	493	528

(6) Remeasurements of defined benefit plans, net of tax

The components of items (before tax) reported under remeasurements of the defined benefit plans, net of tax were as follows:

	(Millions of yen)	
Years ended December 31,	2015	2016
Prior service cost	(53)	(53)
Actuarial gain or loss	(309)	(623)
Total	(363)	(676)

(7) Remeasurements of defined benefit plans

The components of items (before tax) reported under remeasurements of the defined benefit plans were as follows:

	(Millions of yen)	
December 31,	2015	2016
Unrecognized prior service cost	(625)	(572)
Unrecognized actuarial gain or loss	375	998
Total	(250)	426

(8) Matters regarding plan assets

1) Major components of the plan assets

The percentages of the major asset types accounting for the total plan assets were as follows:

December 31,	2015	2016
Bonds	37.3%	37.3%
Stocks	20.3	19.5
General accounts of life insurance companies	38.0	38.4
Other	4.4	4.8
Total	100.0	100.0

2) Method for setting the long-term rate of the expected return on plan assets

To determine the long-term rate of the expected return on plan assets, we take into account the current and projected distribution of plan assets and the current and anticipated long-term yield rates of the various assets that constitute the plan assets.

(9) Matters regarding the assumptions for actuarial calculations

Key assumptions for actuarial calculations (representing weighted averages)

Years ended December 31,	2015	2016
Discount rate	0.6%	0.0%
Long-term rate of the expected return on plan assets	1.0	1.0

3. Defined contribution plan

The amounts required to be contributed by the Company and consolidated subsidiaries are ¥290 million for the previous fiscal year and ¥298 million for the current fiscal year.

(Stock Options, etc.)

Not applicable.

(Tax Effect Accounting)

1. Significant components of deferred tax assets and liabilities:

	(Millions of yen)	
December 31,	2015	2016
Deferred tax assets		
Elimination of unrealized profit	1,514	1,429
Accrued costs of removing facilities	731	682
Depreciation	616	556
Impairment loss on property, plant and equipment	736	551
Net operating loss carry forwards	325	394
Loss on valuation of investment securities	341	324
Accrued enterprise tax	205	299
Valuation loss on inventories	145	81
Net defined benefit liability	51	48
Loss on valuation of golf club membership	48	41
Other	330	453
Gross deferred tax assets	5,045	4,862
Valuation allowance	(1,981)	(1,850)
Total deferred tax assets	3,064	3,012
Deferred tax liabilities		
Unrealized holding gain on available-for-sale securities	(3,544)	(3,308)
Reserve under Special Taxation Measures Law	(564)	(1,042)
Net defined benefit asset	(537)	(374)
Undistributed earnings of overseas partnerships	(376)	(316)
Securities returned from retirement benefit trust	(233)	(221)
Other	(23)	(19)
Total deferred tax liabilities	(5,279)	(5,282)
Net deferred tax assets (liability)	(2,215)	(2,270)

2. Major reasons for which the effective tax rates reflected in the consolidated statements of income differ from the statutory tax rates:

December 31,	2015	2016
Statutory tax rate	35.49%	32.88%
Effect of:		
Permanent difference – entertainment expenses	0.34	0.21
Permanent difference – dividend income	(0.88)	(0.41)
Inhabitants' per capita taxes	0.60	0.36
Amortization of goodwill	0.03	0.01
Equity in earnings of affiliates	(0.98)	(0.54)
Valuation allowance	3.15	0.20
Different tax rates applied to income of foreign consolidated subsidiaries	3.98	0.04
Tax deduction of experiment and research expenses	(1.77)	(1.04)
Other, net	0.27	(0.43)
Effective tax rates.	40.23	31.28

3. Revision to the amounts of deferred tax assets and liabilities pursuant to the change in the income tax rate
   The "Act for Partial Amendment of the Income Tax Act, etc." and "Act for Partial Amendment of the Local Tax Act, etc." were passed by the Japanese Diet on March 29, 2016 and, as a result, the effective statutory tax rate which is used to calculate deferred tax assets and deferred tax liabilities for the current fiscal year (limited to those that will be settled on or after January 1, 2017) has been reduced from 32.11%, the rate of the previous fiscal year, to 30.70% for items expected to be realized or settled in the period from January 1, 2017 to December 31, 2018, and 30.47% for items expected to be realized or settled on or after January 1, 2019.
   As a result, "Deferred tax liabilities" (net of "Deferred tax assets") and "Income taxes – deferred" decreased by ¥214 million and ¥32 million, respectively, while "Unrealized holding gain on available-for-sale securities" and "Remeasurements of defined benefit plans" increased by ¥177 million and ¥4 million, respectively.

(Business Combinations)
Transactions under Common Control
(1) Overview of the transaction
1) Name and description of the businesses subject to the transaction
Name of the businesses: Sales of construction repair materials and civil engineering repair materials, out of the Company's construction materials and civil engineering businesses
Description of the businesses: Sales of construction repair materials (Aron Coat®, Aron Wall®, etc.) and civil engineering repair materials (ARONBULL Coat®)
2) Date of business combination
January 1, 2016
3) Legal form of business combination
Simplified absorption-type company split in which the Company is the splitting company and Aronkasei Co., Ltd. (hereinafter "Aronkasei") is the succeeding company
4) Name of the company after the combination
Aronkasei Co., Ltd. (a consolidated subsidiary of the Company)
5) Other matters regarding the overview of the transaction
The purpose of the company split was to transfer the Company's sales businesses of construction repair materials and civil engineering repair materials to Aronkasei, a company whose markets and customer base are similar to those of the Company's construction materials and civil engineering businesses, and to further expand the businesses by taking advantage of Aronkasei's management resources such as its operating and sales structures.
The Company holds all of Aronkasei's shares and did not allot or deliver any shares, cash, or other assets upon the company split.

(2) Overview of the accounting treatment
The business combination was treated as a transaction under common control pursuant to the Accounting Standard for Business Combinations (ASBJ Statement No. 21 issued on September 13, 2013) and the Guidance on Accounting Standard for Business Combinations and Accounting Standard for Business Divestitures (ASBJ Guidance No. 10 issued on September 13, 2013).

(Asset Retirement Obligations)
Not applicable.

(Rental properties, etc.)
Disclosure on rental properties, etc. is not required because rental properties, etc. are not significant in the Group.

(Segment Information, etc.)

[Segment Information]

1. Outline of Reportable Segments

(1) Outline of Reportable Segments

The reportable segments of the Company and its consolidated subsidiaries are defined as operating segments for which discrete financial information is available and reviewed by the Board of Directors regularly in order to make decisions about resources to be allocated to individual segments and assess performance.

Group operating divisions are organized based on products and services and the operating divisions are responsible for comprehensive domestic and overseas comprehensive plans as to the products and services. The four reportable segments of the Company are “Commodity Chemicals,” “Acrylic Products,” “Specialty Chemicals,” and “Plastics” based on similarity of economic characteristics, and nature of products and services.

(2) Major products attributable to each reportable segment

Reportable segment	Major products
Commodity Chemicals	Caustic soda, caustic potash, liquid chlorine, hydrochloric acid and other inorganic chlorides, high-purity inorganic products, sulfuric acid, industrial gases, etc.
Acrylic Products	Acrylic acid, acrylic ester, acrylic polymers, polymer flocculants, UV-Curable Resins, etc.
Specialty Chemicals	Adhesives, amenity care materials, electronics materials, etc.
Plastics	Piping equipment products, products for construction and civil engineering, nursing care products, elastomer compounds, environmental related products, etc.

(3) Changes in reportable segments, etc.

Effective from the current fiscal year, the Company’s sales businesses for construction repair materials and civil engineering repair materials were succeeded by Aronkasei Co., Ltd., a consolidated subsidiary, through a company split. In conjunction with this business succession, the products of the business formerly included in the Specialty Chemicals segment were transferred to the Plastics segment.

Segment information for the previous fiscal year has been prepared in accordance with the classification method after the change.

2. Method of calculating net sales, income and loss, assets, liabilities and others

The accounting method applied to the reportable segments is the same as described in “Basis for Preparation of Consolidated Financial Statements.”

Segment income of the reportable segments is based on operating income.

Intersegment sales or transfer amounts are determined on the basis of market prices.

3. Information about the amounts of net sales, profit (loss), assets and other items for each reportable segment

(Millions of yen)

Year ended December 31, 2015	Reportable segments					Others (Note 1)	Total	Adjustments (Note 2)	Consolidated (Note 3)
	Commodity Chemicals	Acrylic Products	Specialty Chemicals	Plastics	Total				
Sales									
Sales to third parties	42,458	52,039	15,682	26,527	136,707	3,141	139,848	—	139,848
Intersegment sales	18	76	1,788	8	1,891	7,029	8,921	(8,921)	—
Net sales	42,477	52,115	17,471	26,535	138,599	10,171	148,770	(8,921)	139,848
Segment income	3,368	3,210	4,156	1,461	12,196	54	12,251	96	12,347
Segment assets	34,125	49,749	17,644	37,778	139,297	1,965	141,263	66,755	208,018
Other items									
Depreciation	2,290	3,942	724	1,178	8,135	121	8,257	599	8,857
Amortization of goodwill	—	—	9	—	9	—	9	—	9
Investment in associates accounted for using equity method	628	—	169	—	797	—	797	—	797
Increase in tangible and intangible fixed assets	3,007	1,215	397	1,055	5,676	42	5,719	230	5,949

(Notes)
1. The Others segment includes business operations relative to research and development, transportation and trading firm business.
2. "Adjustments" were as follows:
   (1) The adjustments to segment income include intersegment eliminations.
   (2) The adjustments to segment assets include corporate assets of ¥94,323 million that are not allocated to any reportable segments, and intersegment eliminations.
   (3) The adjustments to depreciation include mainly corporate expenses that are not allocated to any reportable segments.
   (4) The adjustments to increase in tangible and intangible fixed assets include mainly capital investment in corporate assets that are not allocated to any reportable segments.
3. Segment income is reconciled with operating income on the consolidated statements of income.
4. Depreciation in the table above includes amortization of long-term prepaid expense.

(Millions of yen)

Year ended December 31, 2016	Reportable segments					Others (Note 1)	Total	Adjustments (Note 2)	Consolidated (Note 3)
	Commodity Chemicals	Acrylic Products	Specialty Chemicals	Plastics	Total				
Sales									
Sales to third parties	41,217	49,213	15,346	26,447	132,225	3,156	135,382	—	135,382
Intersegment sales	18	44	1,852	0	1,915	7,074	8,990	(8,990)	—
Net sales	41,236	49,257	17,198	26,448	134,141	10,231	144,373	(8,990)	135,382
Segment income	4,869	5,276	3,739	2,038	15,923	209	16,132	14	16,147
Segment assets	31,451	47,301	17,235	43,241	139,230	1,828	141,058	78,462	219,520
Other items									
Depreciation	2,317	3,169	695	1,114	7,296	90	7,386	578	7,965
Amortization of goodwill	—	—	9	—	9	—	9	—	9
Investment in associates accounted for using equity method	688	—	228	—	917	—	917	—	917
Increase in tangible and intangible fixed assets	1,728	1,932	372	946	4,980	17	4,997	361	5,359

(Notes)

1. The Others segment includes business operations relative to research and development, transportation and trading firm business.
2. "Adjustments" were as follows:
   (1) The adjustments to segment income include intersegment eliminations.
   (2) The adjustments to segment assets include corporate assets of ¥109,753 million that are not allocated to any reportable segments, and intersegment eliminations.
   (3) The adjustments to depreciation include mainly corporate expenses that are not allocated to any reportable segments.
   (4) The adjustments to increase in tangible and intangible fixed assets include mainly capital investment in corporate assets that are not allocated to any reportable segments.
3. Segment income is reconciled with operating income on the consolidated statements of income.
4. Depreciation in the table above includes amortization of long-term prepaid expense.

[Related Information]

Year ended December 31, 2015

1. Information related to geographic region

(1) Net sales

(Millions of yen)

Japan	Asia	North America	Other	Total
116,745	17,393	3,117	2,592	139,848

(Note) Net sales are classified into countries and regions based on geographic location of the customer.

(2) Information related to property, plant and equipment
This information is not required to be disclosed because the amount of property, plant and equipment in Japan exceeded 90% of the amount on the consolidated balance sheet.

2. Information on major customer
This information is not required to be disclosed because net sales to any particular customer are less than 10% of the net sales on the consolidated statements of income.

Year ended December 31, 2016

1. Information related to geographic region

(1) Net sales

(Millions of yen)

Japan	Asia	North America	Other	Total
113,720	16,248	2,878	2,535	135,382

(Note) Net sales are classified into countries and regions based on geographic location of the customer.

(2) Information related to property, plant and equipment
This information is not required to be disclosed because the amount of property, plant and equipment in Japan exceeded 90% of the amount on the consolidated balance sheet.

2. Information on major customer
This information is not required to be disclosed because net sales to any particular customer are less than 10% of the net sales on the consolidated statements of income.

[Impairment loss on non-current assets by reportable segment]

Year ended December 31, 2015 (Millions of yen)

Commodity Chemicals	Acrylic Products	Specialty Chemicals	Plastics	Others	Adjustment	Total
—	1,678	—	—	—	148	1,826

(Note) ¥148 million of adjustment of impairment loss was recorded for land and buildings of the former company owned houses.

Year ended December 31, 2016 (Millions of yen)

Commodity Chemicals	Acrylic Products	Specialty Chemicals	Plastics	Others	Adjustment	Total
—	—	—	—	—	19	19

(Note) ¥19 million of adjustment of impairment loss was recorded for land and buildings of idle assets.

[Balance of goodwill by reportable segment]

Year ended December 31, 2015 (Millions of yen)

Commodity Chemicals	Acrylic Products	Specialty Chemicals	Plastics	Others	Adjustment	Total
—	—	9	—	—	—	9

(Note) The amounts of amortization of goodwill are not required to be disclosed because the relevant amounts are disclosed in “Segment Information.”

Year ended December 31, 2016 (Millions of yen)

Commodity Chemicals	Acrylic Products	Specialty Chemicals	Plastics	Others	Adjustment	Total
—	—	—	—	—	—	—

(Note) The amounts of amortization of goodwill are not required to be disclosed because the relevant amounts are disclosed in “Segment Information.”

[Gain on negative goodwill by reportable segment]
Not applicable.

[Related party information]
Not applicable.

(Per Share Information)

Years ended December 31,	2015	2016 (Yen)
Net assets per share	1,201.46	1,276.10
Net income per share	50.86	104.83

(Notes)

1. Diluted net income per share is not disclosed because no potential shares exist.
2. We have executed a two-for-one reverse stock split effective on July 1, 2015. Net income per share is calculated assuming that the two-for-one reverse stock split was executed at the beginning of the previous fiscal year.
3. The basis for calculation of "net income per share" is as follows:

Years ended December 31,	2015	2016
Net income per share		
Net income attributable to owners of parent (Millions of yen)	6,696	13,801
Amounts not belonging to shareholders of common stock (Millions of yen)	—	—
Net income attributable to owners of parent relating to common stock (Millions of yen)	6,696	13,801
Average number of common shares during the fiscal year (Thousands of shares)	131,664	131,647

4. The basis for calculation of "net assets per share" is as follows:

December 31,	2015	2016
Total amount of net assets (Millions of yen)	163,020	173,003
Amount deducted from the total amount of net assets (Millions of yen)	4,846	5,012
(including non-controlling interests)	(4,846)	(5,012)
Amount of net assets at the end of the fiscal year attributable to common stock (Millions of yen)	158,173	167,990
Number of common shares used for calculating net assets per share (Thousands of shares)	131,650	131,643

(Subsequent Events)
Not applicable.

v) [Supplementary Financial Schedules]

[Schedule of bonds and debentures]
Not applicable.

[Schedule of borrowings, etc.]

Classification	Beginning balance (Millions of yen)	Ending balance (Millions of yen)	Average interest rate (%)	Due date of repayment
Short-term bank loans	2,344	2,344	0.471	—
Long-term debt scheduled to be repaid within one year	386	158	0.970	—
Lease obligations scheduled to be repaid within one year	61	55	—	—
Long-term debt (excluding debt scheduled to be repaid within one year)	9,963	9,805	0.718	From 2018 to 2027
Lease obligations (excluding obligations scheduled to be repaid within one year)	85	81	—	From 2018 to 2022
Other interest-bearing debt	—	—	—	—
Total	12,840	12,445	—	—

(Notes)
1. "Average interest rate" presents the weighted average interest rate against the term-end balance of borrowings.
2. "Average interest rate" for lease obligations is not required to be disclosed because lease obligations are stated in the consolidated balance sheets in the amount before deducting the amount equivalent to related interest expenses, which are included in the total lease payments.
3. The projected repayment amounts of long-term debt and lease obligations (excluding debt and obligations scheduled to be repaid within one year) within five years after the consolidated balance sheet date are as follows.

(Millions of yen)

	Over 1 year to 2 years	Over 2 years to 3 years	Over 3 years to 4 years	Over 4 years to 5 years
Long-term debt	4,158	158	158	4,558
Lease obligations	34	23	14	6

[Schedule of asset retirement obligations]
Not applicable.

(2) [Other]

Quarterly data for the current fiscal year ended December 31, 2016

Cumulative periods	First quarter (From January 1 to March 31, 2016)	Second quarter (From January 1 to June 30, 2016)	Third quarter (From January 1 to September 30, 2016)	Current fiscal year (From January 1 to December 31, 2016)
Net sales (Millions of yen)	33,264	66,871	99,887	135,382
Income before income taxes (Millions of yen)	4,097	7,420	11,889	20,696
Net income attributable to owners of parent (Millions of yen)	2,713	4,947	7,886	13,801
Net income per share (Yen)	20.61	37.58	59.90	104.83

Accounting period	First quarter (From January 1 to March 31, 2016)	Second quarter (From April 1 to June 30, 2016)	Third quarter (From July 1 to September 30, 2016)	Fourth quarter (From October 1 to December 31, 2016)
Net income per share (Yen)	20.61	16.97	22.33	44.93