

## First Half, 2020 Consolidated Financial Results (Summary)

### I. First Half 2020 Results

#### 1. Summary

(Unit: billions of yen, except for "per share" indicators)

Items	1st half, 2019 (Jan.-Jun.)	1st half, 2020 (Jan.-Jun.)	Increase/ decrease
Net Sales	475.5	326.6	-148.9
Operating Income	85.5	-25.8	-111.3
Net income attributable to owners of the parent	65.8	-54.6	-120.4
Net income attributable to owners of the parent per share	¥451.16	¥-374.11	¥-825.27
Net assets per share	¥3,366.39	¥2,890.71	¥-475.69
Midterm dividends per share	¥50.00	¥0.00	¥-50.00

#### 2. Net Sales and Operating Income by Segment

(Unit: billions of yen)

Segment		1st half, 2019 (Jan.-Jun.)	1st half, 2020 (Jan.-Jun.)	Increase/ decrease	CQ1, 2020 (Jan. - Mar.)	CQ2, 2020 (Apr. - Jun.)
Net Sales	Petrochemicals	127.5	95.7	-31.7	55.0	40.7
	Chemicals	73.5	72.0	-1.5	36.3	35.7
	Electronics	44.6	44.6	-0.0	23.6	21.0
	Inorganics	142.7	43.0	-99.7	21.4	21.6
	Aluminum	49.0	38.8	-10.2	19.2	19.7
	Others	64.3	55.6	-8.7	28.6	27.0
	Adjustments	-26.1	-23.2	3.0	-12.3	-10.8
	Total	475.5	326.6	-148.9	171.7	154.9
Operating Income	Petrochemicals	8.5	-3.7	-12.1	-0.2	-3.5
	Chemicals	5.5	5.0	-0.5	2.3	2.7
	Electronics	0.9	1.8	0.8	1.0	0.8
	Inorganics	71.8	-22.9	-94.7	0.8	-23.8
	Aluminum	0.5	-0.2	-0.7	0.0	-0.3
	Others	0.6	0.5	-0.1	0.2	0.3
	Adjustments	-2.4	-6.3	-3.9	-1.7	-4.6
	Total	85.5	-25.8	-111.3	2.5	-28.3

#### 3. Cash Flow

(Unit: billions of yen)

Cash Flows from:	1st half, 2019 (Jan.-Jun.)	1st half, 2020 (Jan.-Jun.)	Increase/ decrease
Operating Activities	40.5	5.2	-35.3
Investing Activities	-17.9	-792.6	-774.7
Free Cash Flow	22.6	-787.4	-810.0
Financing Activities	-18.7	864.7	883.4
Others	-3.3	-1.6	1.8
Net increase in Cash	0.6	75.8	75.2

2020 Revised forecast (Jan.-Dec.)
65.0
-950.0
-885.0
970.0
-5.0
80.0

announced on Aug. 12, 2020

#### 4. Reference

(Unit: billions of yen, expect for total number of employees, exchange rate, and domestic naphtha price)

Items	1st half, 2019 (Jan.-Jun.)	1st half, 2020 (Jan.-Jun.)	Increase/ decrease
Capital expenditures	22.3	24.8	2.5
Depreciation and amortization	18.6	19.4	0.8
R&D expenditures	10.1	9.7	-0.3
Gap between interest/dividend income and interest expense	0.2	-0.9	-1.1
Total number of employees	10,603	33,805	23,202
Exchange rate (yen/US\$)	110.1	108.3	1.8
Domestic naphtha price (yen/kl)	43,300	34,900	-8,400

Yen appreciated

Items	Dec. 31, 2019	Jun. 30, 2020	Increase/ decrease
Total assets	1,076.4	2,106.3	1,029.9
Interest-bearing debt	298.5	997.6	699.1

Showa Denko K.K. has made Hitachi Chemical Company, Ltd. a consolidated subsidiary, considering the end of this second quarter (June 30, 2020) as acquisition date, and consolidated Hitachi Chemical's financial results into Showa Denko's consolidated financial statements.

## II. Forecast for 2020

### 1. Summary

(Unit: billions of yen, except for "per share" indicators)

Items	2019	2020 Revised forecast *	Increase/decrease
Net Sales	906.5	960.0	53.5
Operating Income	120.8	-30.0	-150.8
Net income attributable to owners of the parent	73.1	-90.0	-163.1
Net income attributable to owners of the parent per share	¥501.03	¥-616.94	¥-1,117.97
Cash dividends per share	¥130.00	Undecided	-

\* announced on Aug. 12, 2020

Showa Denko K.K. consolidated financial results of Hitachi Chemical Company, Ltd. into its consolidated financial statements, considering the end of the second quarter (June 30, 2020) as acquisition date. Forecast of performance for the year ending December 31, 2020 includes forecast of Hitachi Chemical's financial results for the second half of 2020 (July 1 to December 31, 2020).

### 2. Net sales and Operating Income by Segment

(Unit: billions of yen)

Segment		2019	2020 Revised forecast *	Increase/decrease
Net Sales	Petrochemicals	250.7	186.0	-64.7
	Chemicals	157.5	155.0	-2.5
	Electronics	96.4	100.0	3.6
	Inorganics	230.1	91.0	-139.1
	Aluminum	97.5	85.0	-12.5
	Showa Denko Materials	-	280.0	280.0
	Others	126.2	109.0	-17.2
	Adjustments	-52.0	-46.0	6.0
	Total	906.5	960.0	53.5
Operating Income	Petrochemicals	17.2	1.0	-16.2
	Chemicals	13.7	13.0	-0.7
	Electronics	4.9	9.0	4.1
	Inorganics	89.3	-23.0	-112.3
	Aluminum	1.7	1.5	-0.2
	Showa Denko Materials	-	-20.0	-20.0
	Others	1.8	1.0	-0.8
	Adjustments	-7.8	-12.5	-4.7
	Total	120.8	-30.0	-150.8

Hitachi Chemical Company, Ltd.'s financial results for the second half of 2020 (July 1 to December 31, 2020) is consolidated as "Showa Denko Materials" segment.

## III. Reference

(Unit: billions of yen, expect for exchange rate and domestic naphtha price)

Items	2019	2020 Revised forecast *	Increase/decrease
Capital expenditures	50.2	66.4	16.2
Depreciation and amortization	37.7	61.1	23.4
R&D expenditures	20.6	37.0	16.4
Gap between interest / dividend income and interest expense	0.3	-5.3	-5.6
Interest-bearing debt	298.5	1,115.5	817.0
Exchange rate (yen/US\$)	(1st half) 110.1 (2nd half) 108.1	(1st half) 108.3 (2nd half) 105.0	(1st half) 1.8 (2nd half) 3.1
Domestic naphtha price (yen/kl)	(1st half) 43,300 (2nd half) 40,750	(1st half) 34,900 (2nd half) 25,100	(1st half) -8,400 (2nd half) -15,650

Yen appreciated  
Yen appreciated

Note : The above forecast is based on the information available as of today and assumptions as of today regarding risk factors that could affect our future performance. Actual results may differ materially from the forecast due to a variety of risk factors, including, but not limited to, the influence of the coronavirus disease 2019 (COVID-19) on the world economy, the economic conditions, costs of naphtha and other raw materials, demand or market conditions for our products such as graphite electrodes and other commodities, and foreign exchange rates. We undertake no obligation to update the forward-looking statements unless required by law.

## Consolidated Financial Statements

For the first half year (January 1 to June 30, 2020)



## I. Consolidated Financial Results

August 12th, 2020

(1) Results of operations:

(¥ in millions, US\$ in thousands, except for net income attributable to owners of the parent per share)

	Results for the first half year (Jan.1–Jun.30)			
	2019	2020	Increase (Decrease)	2020
Net sales	¥ 475,494	¥ 326,621	% (31.3)	\$ 3,031,563
Operating income	85,471	(25,795)	—	(239,419)
Ordinary income	84,830	(43,225)	—	(401,195)
Net income attributable to owners of the parent	65,813	(54,575)	—	(506,542)
Net income attributable to owners of the parent per share: Basic	451.16	(374.11)	—	(3.47)
Net income attributable to owners of the parent per share: Diluted	—	—	—	—

## Notes

Important changes in accounting policies : not applicable

Comprehensive income :

Results for the year ended January 1 to June 30, 2020 ¥-63,129 million

Results for the year ended January 1 to June 30, 2019 ¥61,053 million

(¥ in millions, US\$ in thousands, except for stockholders' equity ratio)

(2) Financial position:

	Dec.31, 2019	Jun.30, 2020	Jun.30, 2020
Total assets	¥ 1,076,381	¥ 2,106,297	\$ 19,549,810
Total equity	519,433	727,501	6,752,379
Stockholders' equity ratio	% 46.4	% 20.0	% 20.0

Showa Denko K.K. has made Hitachi Chemical Company, Ltd. a consolidated subsidiary, considering the end of this second quarter (June 30, 2020) as acquisition date, and consolidated Hitachi Chemical's financial results into Showa Denko's consolidated financial statements.

(3) Dividends:

	2019	2020 Forecast
Q1 dividends per share (¥)	—	—
Q2 dividends per share (¥)	50.00	0.00
Q3 dividends per share (¥)	—	—
End of Term dividends per share (¥)	80.00	undecided
Annual dividends per share (¥)	130.00	undecided

## II. Forecast of performance for the year ending December 31, 2020

(¥ in millions, US\$ in thousands, except for net income attributable to owners of the parent per share)

	fiscal year	
	¥	\$
Net sales	960,000	8,910,340
Operating income	(30,000)	(278,448)
Ordinary income	(55,000)	(510,488)
Net income attributable to owners of the parent	(90,000)	(835,344)
Net income attributable to owners of the parent per share: Basic	(616.94)	(5.73)

Showa Denko K.K. consolidated financial results of Hitachi Chemical Company, Ltd. into its consolidated financial statements, considering the end of the second quarter (June 30, 2020) as acquisition date. Forecast of performance for the year ending December 31, 2020 includes forecast of Hitachi Chemical's financial results for the second half of 2020 (July 1 to December 31, 2020).

The above forecast is based on the information available at this point of time. Actual results may differ materially due to a variety of reasons, including such economic factors as fluctuations in foreign currency exchange rates as well as market supply and demand conditions.

## Note

Yen amounts have been translated into U.S.dollars for convenience only, at the rate of ¥107.74 to US\$1.00, the approximate rate of exchange as of June 30, 2020.

## [Business Results and Financial Conditions]

### 1. Analysis of business results

#### (1) Summary

Regarding the Japanese economy in the first half of 2020 (January 1 – June 30), consumer spending deteriorated rapidly since February due to the increasing influence of the coronavirus disease 2019 (COVID-19). Corporate earnings were greatly affected by the slowing down of the world economy caused by the pandemic of COVID-19, and there were also significant effects of the major slowdown in domestic consumer spending, the fast reduction in export and overseas production, and a sharp drop in crude-oil prices on corporate earnings. As a result, many companies showed serious deterioration in their business sentiment. As countermeasures against such an economic downturn, the major powers including Japan, the United States and the European Union are now taking ambitious monetary and fiscal policies. Although business environment of the Showa Denko Group hit the bottom in the second quarter, the speed of economic recovery remains slow, and harsh economic situation is expected to continue due to many unclear factors including US-China trade friction.

Taking the current situation into consideration and giving the highest priority to the preservation of safety and health of our stakeholders including customers, business acquaintances and employees, the Showa Denko Group is implementing various measures to prevent further spread of the infectious disease. To be specific, we are taking various measures to give the highest priority to keeping our employees' health and preventing the spread of COVID-19, including homeworking implemented by employees belonging to major plants, divisions and departments, and grant of special holidays. At the same time, in our production bases, we are making utmost efforts to fulfill our corporate social responsibility to continue providing our customers with products essential for infrastructural functions of society.

#### **Medium-term business plan “The TOP 2021”**

The Showa Denko Group set up its long-term vision and has been promoting its medium-term consolidated business plan “The TOP 2021” since January 2019. It is very important for the Showa Denko Group to enhance the value of the Group and satisfy all stakeholders including shareholders, customers, suppliers, local communities and employees in order that the Group continuously grows and becomes trusted and acclaimed by society. The Showa Denko Group defines this idea as the Group's business philosophy, thereby promoting management to maximize shareholders', customers' and social value.

Furthermore, SDK made tender offer against Hitachi Chemical Company, Ltd. (Hitachi Chemical), and made Hitachi Chemical a consolidated subsidiary in April 2020. World's industrial structure and competitive environment have been changing greatly, and the recent pandemic of COVID-19 will accelerate this trend. In particular, it is expected that the spread of digitalization of social activities will be accelerated, including the diffusion of telework and online businesses, acceleration of introduction of factory automation to production sites, and further strengthening of cyber security. To survive as a global top-level functional chemical manufacturer while coping with such changes in business environment, the Showa Denko Group must evolve into the “One-stop Advanced Materials Partner” for our customers which provides the customers with solutions beyond materials and components. The Group will strengthen its earning power and reduce the range of fluctuation in income through steady implementation of “The TOP 2021,” enhance the value of the Group, realize substantial business integration with Hitachi Chemical as soon as possible, and establish a stable business foundation which will continuously support the

Group's growth far into the future.

The Group recorded consolidated net sales of ¥326,621 million in the first half of 2020, down 31.3% from the same period of the previous year. The sales in the Electronics segment was at the same level of the previous year. However, the sales in the Petrochemicals segment decreased due to a drop in market prices of products resulting from a sharp fall in crude-oil prices. The sales in the Inorganics segment also decreased due to a decline in shipment volumes and prices of graphite electrodes resulting from worldwide decrease in production of steel. The sales in the Chemicals, Aluminum, and Others segments also decreased due to a significant decrease in shipment volumes of products resulting from an enormous impact of the pandemic of COVID-19.

In the first half of 2020, the Group recorded operating loss of ¥25,795 million, a deterioration of ¥111,266 million from the same period of the previous year. Operating income in the Electronics segment increased due to an increase in shipment volumes of HD media. However, the Inorganics segment recorded a sharp decrease in operating income due to a drop in book value of inventory of graphite electrodes amounting to ¥21,683 million resulting from a decline in market prices of products and application of the lower of cost or market valuation accounting method, in addition to a decrease in shipment volumes of graphite electrodes. Operating income in the Petrochemicals segment also decreased due to a negative impact of the negative spread between purchase and shipment prices of raw naphtha inventory. Operating income in the Chemicals, Aluminum and Others segments also decreased due to a decrease in shipment volumes of products resulting from the impact of the pandemic of COVID-19. The Group recorded ordinary loss of ¥43,225 million, a deterioration of ¥128,055 million from the same period of the previous year, due not only to the recording of operating loss but also to the recording of non-operating loss of about ¥16,100 million incurred as temporary expenses pertaining to fund-raising for acquisition of shares in Hitachi Chemical.

The Group recorded net loss attributable to owners of the parent of ¥54,575 million in the first half of 2020, a deterioration of ¥120,388 million from the same period of the previous year, due partly to the posting of extraordinary loss of ¥4,741 million to cover expenses relating to closure of a graphite electrode plant in Germany.

(Unit: millions of yen)

	1H 2019	1H 2020	Increase/decrease
Sales	475,494	326,621	-148,873
Operating income	85,471	-25,795	-111,266
Ordinary income	84,830	-43,225	-128,055
Net income attributable to owners of the parent	65,813	-54,575	-120,388

(2) A breakdown of net sales and operating income by segment (January 1 – June 30, 2020)

[Petrochemicals segment]

In the Petrochemicals segment, sales decreased 24.9%, to ¥95,743 million. In our olefin business, sales decreased due to a drop in market prices of products including ethylene and propylene resulting from a fall in prices of crude oil and raw naphtha and softening supply-demand balance in East Asia caused by a slowdown in the Chinese economy. Sales of derivatives also decreased due to periodic maintenance of production facilities which took place in the first half of 2020. Sales of organic chemicals decreased due to a reduction in

shipment volumes of ethyl acetate and vinyl acetate resulting from the periodic shutdown maintenance of facilities to produce these products, in addition to the effect of a drop in market prices of organic chemicals. The Petrochemicals segment recorded an operating loss of ¥3,667 million, a deterioration of ¥12,131 million from the same period of the previous year due mainly to a negative impact of the negative spread between purchase and shipment prices of raw naphtha inventory caused by a fall in raw naphtha price.

(Unit: millions of yen)

	1H 2019	1H 2020	Increase/decrease
Sales	127,480	95,743	-31,736
Operating income	8,465	-3,667	-12,131

#### [Chemicals segment]

In the Chemicals segment, sales decreased 2.0%, to ¥72,041 million. Sales of electronic chemicals increased due to an increase in shipment volumes resulting from a recovery of semiconductor industry's production. However, sales of basic chemicals decreased. Sales of liquefied ammonia decreased due to a decrease in shipment volumes caused by a decline in domestic demand resulting from the spread of COVID-19. Sales of acrylonitrile decreased due to a fall in market prices. Sales of chloroprene rubber decreased due to a reduction in export volumes. Sales of functional chemicals decreased due mainly to a fall in sales volumes in Japan and China. Sales of industrial gases decreased due to a decline in shipment volumes for use in production of beverages. Consolidation of non-stick coating chemicals companies took place in the second half of 2019. Operating income of the segment decreased 9.1%, to ¥5,020 million.

(Unit: millions of yen)

	1H 2019	1H 2020	Increase/decrease
Sales	73,525	72,041	-1,484
Operating income	5,522	5,020	-502

#### [Electronics segment]

In the Electronics segment, sales decreased 0.0%, to ¥44,574 million. Sales of HD media slightly increased due to an increase in shipment volumes of media for use in data centers, despite a decrease in shipment volumes of media for PCs. Sales of compound semiconductors increased due to an increase in export. Sales of lithium-ion battery (LIB) materials increased due to an increase in shipment volumes of Showa Denko Packaging's aluminum laminate film (*SPALF*<sup>TM</sup>) used as packaging material for LIBs built into tablets and smartphones, despite a decrease in shipment volumes of LIB materials for on-board use. As for SiC epitaxial wafer business, sales decreased due mainly to a decrease in export, despite steady shipment volumes of SiC epitaxial wafers for use in domestic railcars. Operating income of the segment increased 86.6% from the year-before period, to ¥1,768 million.

(Unit: millions of yen)

	1H 2019	1H 2020	Increase/decrease
Sales	44,588	44,574	-14
Operating income	947	1,768	821

#### [Inorganics segment]

In the Inorganics segment, sales decreased 69.9%, to ¥43,004 million. Sales of graphite electrodes significantly decreased due to a further reduction in the Company's production

and sales volumes of graphite electrodes aiming to respond to the weakening supply-demand situation of graphite electrodes in the market resulting from a global slowdown in steel production and partial-clearance of our customers' graphite-electrode inventory. Sales of ceramics decreased due to a fall in sales volumes of abrasives and other ceramics resulting from a decrease in production of automobiles and steel. Operating income of the segment recorded a decrease due to a drop in book value of inventory of graphite electrodes amounting to ¥21,683 million resulting from a decline in market prices of products and application of the lower of cost or market valuation accounting method. As a result, the segment recorded operating loss of ¥22,905 million, a deterioration of ¥94,742 million from the year-before period.

(Unit: millions of yen)

	1H 2019	1H 2020	Increase/decrease
Sales	142,713	43,004	-99,708
Operating income	71,837	-22,905	-94,742

[Aluminum segment]

In the Aluminum segment, sales decreased 20.7%, to ¥38,848 million. Sales of rolled products decreased due to a decline in shipment volumes of high-purity aluminum foil for capacitors resulting from adjustment of production in customer industries including industrial equipment and automotive parts industries. Sales of aluminum specialty components decreased due mainly to a decline in shipment volumes of those for use in automotive parts resulting from a reduction in production of cars worldwide. Sales of aluminum cans decreased due to a reduction in the Group's domestic production capacity and, in the Vietnamese market, a significant fall in production of beer in April and May resulting from outing restrictions as countermeasures against COVID-19. The segment recorded operating loss of ¥205 million, a deterioration of ¥685 million from the year-before period.

(Unit: millions of yen)

	1H 2019	1H 2020	Increase/decrease
Sales	49,018	38,848	-10,170
Operating income	480	-205	-685

[Others segment]

In the Others segment, sales decreased 13.6%, to ¥55,561 million. SHOKO CO., LTD.'s sales decreased due to a fall in market prices of products and reduced demand. Operating income of the segment decreased 21.4%, to ¥481 million.

(Unit: millions of yen)

	1H 2019	1H 2020	Increase/decrease
Sales	64,303	55,561	-8,743
Operating income	612	481	-133

(3) Major steps taken or decided in the second quarter of 2020

[General]

- Announcement regarding results of tender offer for shares in Hitachi Chemical Company, Ltd. and change in subsidiary
- Announcement regarding fundraising, capital reduction of the consolidated subsidiary and change in the specified subsidiary company

For details, please refer to our news releases announced on April 21, 2020.

- As SDK's consolidated subsidiary, Hitachi Chemical changes firm name  
 Hitachi Chemical Company, Ltd., a consolidated subsidiary of SDK, has resolved at the annual general shareholders' meeting held on June 23, 2020 to change its firm name into "Showa Denko Materials Co., Ltd." on October 1, 2020. The new firm name represents Hitachi Chemical's determination of opening its new chapter as a consolidated subsidiary of SDK, and now SDK and Hitachi Chemical share the idea of offering their customers and society optimum solutions by combining Showa Denko Group's wide-ranging material technology with Hitachi Chemical Group's material design technology utilizing characteristics of raw materials, ability to evaluate functions, and ability to design functions leading to process technology, including module segmentation.
- Received award for used-plastic chemical recycling business  
 SDK received an award from Chairman of the Japan Business Federation for its used-plastic chemical recycling business. This award is part of Fujisankei Communications Group's 29th Grand Prize for the Global environment Award\*. SDK has been conducting the used-plastic chemical recycling business since 2003. At its Kawasaki Plant, used plastic collected from home is gasified by thermal decomposition to generate hydrogen and carbon monoxide. Carbon monoxide from this process is used for production of carbonic acid products. Hydrogen is used as raw material for ammonia production, in fuel-cell vehicles, and for power generation at a hotel using fuel cells. Thus this business is contributing toward promotion of a low-carbon society. While reducing CO<sub>2</sub> emissions by avoiding incineration of used plastic, the business promotes resource recycling on land and reduces marine pollution by plastic. In addition to this chemical recycling, the Showa Denko Group is conducting various environment-friendly businesses. They include the global supply of graphite electrodes for recycling of iron, and production of aluminum cans based on used aluminum cans (can-to-can recycling). The group was the first company in Japan to start an aluminum can recycling project.

\*This award was established in 1992 by Fujisankei Communications Group with special contribution from World Wide Fund for Nature (WWF) Japan. The award aims at encouraging the development of new technologies and products that will prevent global warming and promote a recycling-oriented society. It also aims at promoting environmental protection measures and enhancing global environment awareness. The award is granted to corporations recognized as having accomplished distinguished achievements in these areas.
- Introduced AI system to examine capital investment  
 SDK introduced an artificial-intelligence-based search system to look efficiently for information useful for capital investment evaluation from the company's knowledge databases. This new search engine uses an AI system named "KIBIT\*" and searches the company's document database for knowledge useful for its internal examination and screening of investment plans. SDK started operation of the new system at the end of January 2020. KIBIT is an AI which simulates "tacit knowledge" held by experts and skilled workers. In order to search databases for cases appropriate to refer, this AI looks up not only key words but also structure of writing and the line of thought in documents on databases, including those in documents contained in attached files. This system enables us to extract cases of investment similar to newly suggested investment plans under screening not reliant on examiners' experiences. In a trial run of the new system conducted in SDK, we confirmed that the KIBIT-based system searched our document databases for similar cases of investment and judged degree of similarity within almost one tenth of the time needed by conventional search systems. In addition, the KIBIT-based system enables us to pick up many similar cases simultaneously, and make the most of our knowledge and know-how about facility-safety measures. SDK will put this new search system into regular use in its process to judge appropriateness of capital investment



plans, and consider to extend the use of the news search system to cover search for similar cases of accidents and abnormalities in production fields.

\*KIBIT: An artificial intelligence originally developed by FRONTEO, Inc. This AI is equipped with FRONTEO's original mechanical learning algorithm and powerful natural-language processing technology. It can learn deeply from small amount of teaching data, and conduct high precision analysis of database in a short time.

- Developed AI-based image analysis system to improve spherical alumina production  
SDK developed an artificial-intelligence-based image analysis system for spherical alumina production in cooperation with BLUE TAG. SDK started using the system at its production line in the first half of 2020. SDK's spherical alumina product has the advantage of uniformity in sphericity and stability in product quality. Due to high fluidity and compatibility, it is used as filler for heatsinks for electronic components and as abrasive. The AI-based image analysis system we developed this time utilizes BLUE TAG's high technology of micro-level-image processing in the process to learn examples of skilled operator's judgement as training data. Thus the new system is aimed at visualizing experience-based knowledge of skilled operators and ensuring quick feedback of digitalized data to the production process to stabilize product quality. This was not possible under the conventional image-analysis software. As a result of initial tests, we confirmed the system's ability to make a judgement at the same level as that of skilled operators in about 20 seconds. In addition, this system also enables accumulation of data for relearning process, and inspection accuracy under the system can be improved based on operation results at the production line. Fully utilizing the new AI-based image analysis system, we will work to further improve product quality and productivity.
- Oita Complex received Best Safety Award from Japan Chemical Industry Association  
In May 2020, SDK's Oita Complex received the Best Safety Award from Japan Chemical Industry Association (JCIA) in a program to commend chemical companies' safety activities. This is an award to commend model business facilities which perform excellent safety activities, aiming to promote voluntary safety/security activities in the chemical industry. Oita Complex's receiving the award brought SDK an honor to receive the award for two consecutive years, following the one awarded to Oyama Plant in 2019. In addition, this was the second time for Oita Complex to receive the award, following the first one in 2010. Oita Complex put "Give top priority to safety, aiming to achieve operation without any accidents or disasters" into the first line of its management policy. All employees and members of cooperative companies promote safety activities, equipment maintenance activities, educational programs and health care programs including "Oita Complex production system reform activities." Oita Complex continues operation without any accidents and disasters for a total of 6,250,000 hours, or 6 years. Cooperative companies continue operation without any absence from the workplace because of work-related injury for more than 10 years. This time, one of the reason Oita Complex received the award was the establishment of safety culture among SDK, other companies that constitute the Complex, and cooperative companies. Operation without any accidents and disasters was made possible through implementation of "Do all the common tasks properly" policy based on every employee's sense of responsibility. The Showa Denko Group as a body will nourish safety culture further, and enrich safety activities.

[Chemicals segment]

- Decided to establish second factory in Shanghai to produce electronic high-purity gases  
In January 2020, SDK decided to establish its subsidiary's second factory in Shanghai to produce high-purity gases for electronics. Shanghai Showa Electronics Materials Co., Ltd. (SSE), which is SDK's wholly owned subsidiary producing high-purity gases for electronics, acquired a right to use a site for its second factory adjacent to the First Factory for 50 years,

and will establish facilities to produce high-purity nitrous oxide (N<sub>2</sub>O) and high-purity octafluorocyclobutane (C<sub>4</sub>F<sub>8</sub>) gases and a dangerous goods warehouse to stock high-pressure gases. The second factory will start its operations in the second half of 2021. High-purity N<sub>2</sub>O is a specialty gas used to form oxidized films on surfaces of integrated circuits which will compose semiconductor chips or display panels. High-purity C<sub>4</sub>F<sub>8</sub> is a specialty gas used for etching of those oxidized films and other micromachining processes. The Showa Denko Group is now producing high-purity N<sub>2</sub>O at Kawasaki Plant and a site of a group company in the Republic of Korea, and high-purity C<sub>4</sub>F<sub>8</sub> at Kawasaki Plant and SSE's First Factory in Shanghai. Due to progress in information communication technologies including 5G mobile communication technology and Chinese government's policy to nurture high-technology industry, the market in China for semiconductor chips and display panels. In order to strengthen its adaptability to changes in needs of the market, including the need for stable supply of high-purity gases, the Group now aims to promote "local consumption of locally produced high-purity gases" further. In addition, since the market for semiconductor chips in Taiwan is also expected to expand, SDK's subsidiary "Taiwan Showa Chemicals Manufacturing Co., Ltd." has established a new facility to produce high-purity C<sub>4</sub>F<sub>8</sub> with annual production capacity of 150t, and started operation in May 2020.

- Completed expansion of lines to produce vinyl ester resin and synthetic resin emulsion in Shanghai

In June 2020, SDK expanded production lines to produce vinyl ester resin (VE) and synthetic resin emulsion (EM) in the premises of Shanghai Showa Highpolymer Co., Ltd. (SSHP), a Chinese subsidiary of SDK, and has increased production of VE and EM there, aiming to expand the Showa Denko Group's functional resin business in China. The market for electronic parts such as liquid crystal displays (LCDs) and touch panels has been expanding due to the progress in telecommunication technologies including 5th Generation mobile communication system. As a result, the demand for VE, which is used in the process to produce electronic parts including LCDs and touch panels, has been rapidly increasing in China. In addition, since VE has excellent corrosion resistance and chemical resistance, the demand for VE for use as corrosion-resistant inner lining material has also been increasing. This use includes inner lining for desulfurization equipment increasingly introduced to thermal power plants to prevent air pollution, wastewater treatment equipment for electronic parts factories, garbage plants and storage tanks for chemicals. In China, regulation against volatile organic compound (VOC) as an environmental protection policy started in 2015, and, since then, there has been strict regulation for use of paints and adhesives containing organic solvents. As a result, switching over to aqueous paints and aqueous adhesives utilizing EM has been in progress, and therefore the demand for EM has been increasing.

#### [Electronics segment]

- Developed HAMR-technology-based HD media

SDK developed the technology of manufacturing media for next-generation hard disk drives (HDDs) based on the Heat Assisted Magnetic Recording (HAMR\*) technology. Due to the rapid expansion of cloud service, video content, and image-sharing website, the world's data generation volume is growing rapidly. Thus, data centers need HDDs with larger storage capacity. While HD media record information through the polarity of magnetic particles, the speed of improving recording density has slowed down under conventional magnetic recording methods. As a result, there is a need for new recording methods, including HAMR. Also, there is a need for next-generation HD media corresponding to such new recording methods. To contribute toward commercialization of HAMR-based HDDs, SDK has successfully manufactured a new type of HD media.

The new product has magnetic coercivity several times as high as the existing most-advanced HD media, while achieving low noise due to very small crystal grain size and optimized grain size distribution control. The new product embodies the highest levels in the industry in terms of read-write characteristics and durability. HD media are key parts for HDDs to determine their storage capacities. As the largest independent HD media supplier, SDK aims to quickly launch top-quality media based on innovative technologies. In accordance with its motto of “Best in Class,” SDK will continue contributing to the increases in storage capacities of HDDs.

\*HAMR represents a recording method in which magnetic film is locally heated at the time of recording. This technology has been developed to solve the “magnetic recording trilemma”: difficulty in simultaneously meeting the three requirements of fine-particle structure, resistance to thermal fluctuation, and ease of magnetization. Compared with the recording density of approx. 1.14 Tb/in<sup>2</sup> for HD media based on conventional magnetic recording methods, it is said that HAMR-based HD media will achieve recording density of 5-6 Tb/in<sup>2</sup> in the future. Provided that the same number of disks are used, it is estimated that a 3.5-inch HDD will achieve storage capacity of approx. 70-80 TB per unit.

- Decided to install equipment to mass-produce *SPALF*<sup>TM</sup> packaging material for large onboard LIBs

Showa Denko Packaging Co., Ltd. (SPA), a consolidated subsidiary of SDK, has developed a new product to be added to the lineup of *SPALF*<sup>TM</sup> aluminum laminate film which is used as packaging material for pouch-type lithium-ion batteries (LIBs), and decided to install equipment to mass-produce the new product. This new product is specialized for large-sized LIBs, which are mainly used for cars. Operation of the new production equipment is scheduled to be started in March, 2021. *SPALF*<sup>TM</sup> is laminated composite film consisting of resin films and aluminum foil, and is mainly used as packaging material for pouch-type LIBs. Pouch-type LIBs have outstanding flexibility in shaping. In recent years, pouch-type LIBs have begun to be widely used in large-sized equipment including EVs because pouch-type LIBs’ high quality has been widely recognized and there has been considerable progress in verification of pouch-type LIBs’ safety. Since development of EVs is in progress not only in China but also in Europe, the demand for pouch-type LIBs has been increasing. The global demand for LIBs (in electrical capacitance) is expected to increase 30% a year until 2025\*. The Showa Denko Group produces and sells various LIB materials with distinguishing advantages, such as *SPALF*<sup>TM</sup>, *VGCF*<sup>TM</sup> additives for anode/cathode materials, and *POLYSOL*<sup>TM</sup> aqueous binding resin. By increasing sales of these LIB materials, the Group will aim to contribute to the growth of LIB market and improvement in functions of LIBs, and make the Group’s LIB materials business grow to be established as a KOSEIHA Business in the field of advanced battery materials.

\*SDK’s estimate

#### [Inorganics segment]

- About closing of a graphite electrode production site in Germany  
In June 2020, the Showa Denko Group completed labor-management consultations concerning planned closure of a production site in Meitingen, Germany, under the jurisdiction of consolidated subsidiaries SHOWA DENKO CARBON Products Germany GmbH & Co. KG and SHOWA DENKO CARBON Germany GmbH. The Meitingen site is currently producing connecting pins\* for graphite electrodes. When the site is closed, the Showa Denko Group’s connecting pin production will be concentrated at Omachi Plant in Japan. When production at Meitingen is stopped, the Showa Denko Group’s global graphite electrode production capacity will decrease by 40,000 t/y, to 210,000 t/y. The Group has the leading share in the global ultrahigh power (UHP) graphite electrode market. However, electric steelmakers are continuing to adjust their inventory of graphite electrodes since the second half of 2019. Thus, our operating rates have fallen in the European market, where economic slowdown is noticeable. In addition, we have started temporary idling for a limited period at SHOWA DENKO CARBON Austria GmbH’s Steeg

site. These two actions will result in a rebalancing of capacity in Europe in line with projected graphite electrode demand. SDK will continue taking various measures to achieve “Value in Use No. 1” for customers and to further increase competitiveness and profitability.

\*A connecting pin is used for connecting rods of graphite electrodes.

## 2. Financial conditions for the January 1 – June 30, 2020 period (as compared with the conditions at December 31, 2019)

### a) Situation of assets, liabilities, and net assets

Showa Denko K.K. has made Hitachi Chemical Company, Ltd. a consolidated subsidiary through acquisition of shares in Hitachi Chemical, considering the end of this second quarter (June 30, 2020) as acquisition date, and consolidated Hitachi Chemical’s financial results into Showa Denko’s consolidated financial statements. This consolidation affected our consolidated balance sheets as follows.

Total assets:	Increase of ¥1,100,249 million
Liabilities:	Increase of ¥538,236 million
Non-controlling interests:	Increase of ¥283,969 million

Total assets at June 30, 2020 amounted to ¥2,106,297 million, an increase of ¥1,029,915 million from the level at December 31, 2019. Total assets increased due mainly to an increase in cash and deposits, notes and accounts receivable-trade, inventories, tangible fixed assets, and goodwill resulting from consolidation of Hitachi Chemical Company, Ltd. and its subsidiaries. Total liabilities increased ¥821,847 million, to ¥1,378,795 million, due mainly to an increase in notes and accounts payable-trade, and an increase in interest-bearing debts resulting from acquisition of shares in Hitachi Chemical. Interest-bearing debts increased ¥699,114 million, to ¥997,638 million. Net assets increased ¥208,068 million from the level at December 31, 2019, to ¥727,501 million, due mainly to an increase in non-controlling interests resulting from the issuance of preferred stock to be allocated to non-controlling shareholders following the acquisition of shares in Hitachi Chemical, despite a decrease in retained earnings resulting from the posting of net loss attributable to owners of the parent and payment of dividends for the previous year.

### b) Situation of cash flows

Net cash provided by operating activities during the first half of 2020 amounted to ¥5,169 million, a decrease of ¥35,325 million from the same period of the previous year, due partly to a decrease in the income before income taxes and minority interests. Net cash used in investing activities increased ¥774,700 million from the same period of the previous year, to ¥792,565 million, due partly to an expenditure for acquisition of shares in a subsidiary accompanied by additional consolidation. Thus, free cash flow ended up in the expenditure of ¥787,396 million, a decline in proceeds of ¥810,025 million. Cash flows from financing activities ended up in the proceeds of ¥864,740 million, an increase in the proceeds of ¥883,443 million from the same period of the previous year, due partly to an increase in proceeds resulting from a long-term borrowing. As a result, after the effects of exchange rate fluctuations are taken into account, cash and cash equivalents at the end of the first half year period increased ¥75,767 million from the level at December 31, 2019, to ¥197,501 million.

## 3. Performance forecast

### a) Performance forecast

SDK announced today (August 12, 2020) its forecast of consolidated performance for full

year 2020 as described below. In our earlier news release, performance forecast was left “undecided.” The revision is based on SDK’s actual business results for the first half of this year and forecast of the performance of our newly consolidated subsidiary Hitachi Chemical Company, Ltd. for the July-December period. For detail, please refer to the news release “SDK Revises Forecast of Consolidated Performance for Full-year 2020.”

(Millions of yen)

	Net sales	Operating income	Ordinary income	Net income attributable to owners of the parent
Earlier forecast (Announced on May 15, 2020)	Undecided	Undecided	Undecided	Undecided
Revised forecast (Announced on Aug. 12, 2020)	960,000	-30,000	-55,000	-90,000

b) Forecast of dividend payment

As for the forecast of dividend payment at the end of the year, we would like to keep it “undecided” in view of the great difficulty in predicting how the COVID-19 pandemic would be, and the continuation of many unclear factors regarding our business environment in the second half of this year and 2021. As soon as it becomes possible to make a reasonable estimate of the business environment, we will announce a new dividend payment forecast.

	Dividend per share (yen)				
	End of 1Q	End of 2Q	End of 3Q	End of the year	Total
Earlier forecast	-	Undecided	-	Undecided	Undecided
Revised forecast	-	0.00	-	Undecided	Undecided
Dividend paid for the year ended on December 31, 2019	-	50.00	-	80.00	130.00

## Consolidated Balance Sheets

(¥ in millions, US\$ in thousands)

	Dec. 31, 2019	Jun. 30, 2020	Jun. 30, 2020
	¥	¥	\$
<b>Assets</b>			
Current assets			
Cash and deposits	122,086	198,637	1,843,666
Notes and accounts receivable-trade	170,293	248,287	2,304,502
Merchandise and finished goods	70,140	118,372	1,098,682
Work in process	30,979	34,114	316,630
Raw materials and supplies	72,548	87,105	808,470
Other	31,765	61,116	567,252
Allowance for doubtful accounts	(754)	(2,023)	(18,778)
Total current assets	497,057	745,607	6,920,425
Noncurrent assets			
Property, plant and equipment			
Buildings and structures, net	77,123	142,836	1,325,748
Machinery, equipment and vehicles, net	140,349	221,467	2,055,570
Land	223,997	248,227	2,303,946
Other, net	31,700	102,724	953,443
Total property, plant and equipment	473,168	715,254	6,638,707
Intangible assets			
Goodwill	3,346	482,238	4,475,940
Other	19,304	30,286	281,101
Total intangible assets	22,650	512,524	4,757,040
Investments and other assets			
Investment securities	71,786	82,670	767,307
Other	19,846	58,169	539,904
Allowance for doubtful accounts	(8,125)	(7,927)	(73,573)
Total investments and other assets	83,506	132,912	1,233,638
Total noncurrent assets	579,325	1,360,690	12,629,385
<b>Total assets</b>	<b>1,076,381</b>	<b>2,106,297</b>	<b>19,549,810</b>
<b>Liabilities</b>			
Current liabilities			
Notes and accounts payable-trade	117,510	153,883	1,428,283
Short-term loans payable	52,720	75,871	704,206
Current portion of long-term loans payable	31,943	30,227	280,556
Commercial papers	—	53,000	491,925
Current portion of bonds	—	15,000	139,224
Provision	5,379	14,930	138,572
Other	55,323	97,610	905,973
Total current liabilities	262,875	440,521	4,088,739
Noncurrent liabilities			
Bonds payable	62,000	76,922	713,960
Long-term loans payable	151,861	746,618	6,929,810
Provision	3,045	3,355	31,139
Net defined benefit liability	9,969	26,199	243,171
Other	67,199	85,181	790,612
Total noncurrent liabilities	294,074	938,274	8,708,692
<b>Total liabilities</b>	<b>556,949</b>	<b>1,378,795</b>	<b>12,797,431</b>
<b>Net assets</b>			
Shareholders' equity			
Capital stock	140,564	140,564	1,304,655
Capital surplus	78,912	78,912	732,427
Retained earnings	249,246	183,465	1,702,853
Treasury stock	(11,664)	(11,655)	(108,176)
Total shareholders' equity	457,057	391,286	3,631,759
Accumulated other comprehensive income			
Valuation difference on available-for-sale securities	9,789	3,659	33,959
Deferred gains or losses on hedges	433	(386)	(3,581)
Revaluation reserve for land	33,060	32,848	304,878
Foreign currency translation adjustment	4,140	(766)	(7,110)
Remeasurements of defined benefit plans	(5,114)	(4,934)	(45,795)
Total accumulated other comprehensive income	42,309	30,421	282,351
Non-controlling interests	20,067	305,795	2,838,269
<b>Total net assets</b>	<b>519,433</b>	<b>727,501</b>	<b>6,752,379</b>
<b>Total liabilities and net assets</b>	<b>1,076,381</b>	<b>2,106,297</b>	<b>19,549,810</b>

## Consolidated Statements of Income

(¥ in millions, US\$ in thousands)

	Results for the first half year (Jan. 1-Jun. 30)		
	2019	2020	2020
	¥	¥	\$
Net sales	475,494	326,621	3,031,563
Cost of sales	334,836	296,724	2,754,076
Gross profit	140,658	29,897	277,488
Selling, general and administrative expenses	55,187	55,692	516,907
Operating income (loss)	85,471	(25,795)	(239,419)
Non-operating income			
Interest income	568	399	3,704
Dividends income	713	637	5,915
Equity in earnings of affiliates	540	436	4,047
Rent income on noncurrent assets	678	701	6,510
Miscellaneous income	582	970	9,002
Total non-operating income	3,081	3,144	29,178
Non-operating expenses			
Interest expenses	1,111	1,973	18,312
Financing expenses	—	16,075	149,202
Miscellaneous expenses	2,611	2,525	23,440
Total non-operating expenses	3,722	20,573	190,954
Ordinary income (loss)	84,830	(43,225)	(401,195)
Extraordinary income			
Gain on sales of noncurrent assets	499	1,567	14,547
Other	1,310	519	4,815
Total extraordinary income	1,810	2,086	19,362
Extraordinary loss			
Loss on sales and retirement of noncurrent assets	986	1,488	13,813
Business structuring expenses	—	5,278	48,993
Other	2,021	1,693	15,715
Total extraordinary losses	3,007	8,460	78,521
Profit (loss) before income taxes	83,633	(49,598)	(460,353)
Income taxes	16,167	1,709	15,866
Net income (loss)	67,466	(51,308)	(476,219)
Net income attributable to non-controlling interests	1,653	3,267	30,323
Net income (loss) attributable to owners of the parent	65,813	(54,575)	(506,542)

## Consolidated Statements of Comprehensive Income

(¥ in millions, US\$ in thousands)

	Results for the first half year (Jan. 1-Jun. 30)		
	2019	2020	2020
	¥	¥	\$
Net income (loss)	67,466	(51,308)	(476,219)
Other comprehensive income:			
Valuation difference on available-for-sale securities	642	(6,163)	(57,202)
Deferred gains or losses on hedges	(690)	(820)	(7,609)
Foreign currency translation adjustments	(7,235)	(4,965)	(46,082)
Remeasurements of defined benefit plans, net of tax	948	188	1,743
Share of other comprehensive income of entities accounted for using equity method	(78)	(62)	(573)
<b>Total other comprehensive income</b>	<b>(6,413)</b>	<b>(11,822)</b>	<b>(109,723)</b>
<b>Comprehensive income</b>	<b>61,053</b>	<b>(63,129)</b>	<b>(585,943)</b>
(Comprehensive income attributable to)			
Comprehensive income attributable to owners of the parent	59,587	(66,250)	(614,910)
Comprehensive income attributable to non-controlling interests	1,466	3,121	28,968



## Consolidated Statements of Cash Flows

(¥ in millions, US\$ in thousands)

	Results for the first half year (Jan. 1-Jun. 30)		
	2019	2020	2020
	¥	¥	\$
<b>Net cash provided by (used in) operating activities</b>			
Income before income taxes and minority interests	83,633	(49,598)	(460,353)
Depreciation and amortization	18,598	19,429	180,334
Impairment loss	1,140	323	3,001
Amortization of goodwill	-	107	991
Amortization of negative goodwill	(1)	-	-
Increase (decrease) in net defined benefit liability	(8,663)	(1,535)	(14,250)
Interest and dividends income	(1,281)	(1,036)	(9,619)
Interest expenses	1,111	1,973	18,312
Financing expenses	-	16,075	149,202
Equity in (earnings) losses of affiliates	(540)	(436)	(4,047)
Loss (gain) on sales and valuation of investment securities	(1,188)	432	4,010
Loss on retirement of noncurrent assets	913	1,219	11,310
Loss (gain) on sales of noncurrent assets	(426)	(1,298)	(12,044)
Decrease (increase) in notes and accounts receivable-trade	19,117	37,799	350,836
Decrease (increase) in inventories	(19,442)	20,906	194,042
Increase (decrease) in notes and accounts payable-trade	(12,978)	(32,029)	(297,278)
Other, net	(26,653)	(1,105)	(10,260)
Subtotal	53,341	11,225	104,184
Interest and dividends income received	1,769	1,450	13,458
Interest expenses paid	(1,141)	(1,954)	(18,132)
Income taxes paid	(13,475)	(5,553)	(51,538)
Net cash provided by (used in) operating activities	40,494	5,169	47,972
<b>Net cash provided by (used in) investing activities</b>			
Payments into time deposits	-	(16)	(150)
Proceeds from withdrawal of time deposits	-	204	1,893
Purchase of property, plant and equipment	(19,166)	(25,958)	(240,934)
Proceeds from sales of property, plant and equipment	1,029	5,443	50,517
Purchase of investment securities	(561)	(14)	(133)
Proceeds from sales of investment securities	4,045	1,466	13,607
Purchase of investments in subsidiaries resulting in change in scope of consolidation	-	(770,760)	(7,153,889)
Net decrease (increase) in short-term loans receivable	372	(1,149)	(10,663)
Payments of long-term loans receivable	(24)	(85)	(784)
Collection of long-term loans receivable	42	36	333
Other, net	(3,602)	(1,732)	(16,073)
Net cash provided by (used in) investing activities	(17,865)	(792,565)	(7,356,275)
<b>Net cash provided by (used in) financing activities</b>			
Net increase (decrease) in short-term loans payable	(10,075)	(5,556)	(51,568)
Net increase (decrease) in commercial papers	(12,000)	53,000	491,925
Proceeds from long-term loans payable	19,800	581,404	5,396,363
Repayment of long-term loans payable	(18,948)	(17,379)	(161,301)
Proceeds from issuance of bonds	20,000	-	-
Proceeds from issuance of common stock	-	268,503	2,492,134
Purchase of treasury shares	(4)	(1)	(11)
Proceeds from sales of treasury shares	3	1	5
Cash dividends paid	(14,560)	(11,654)	(108,172)
Cash dividends paid to non controlling shareholders	(1,283)	(1,079)	(10,017)
Other, net	(1,635)	(2,498)	(23,184)
Net cash provided by (used in) financing activities	(18,703)	864,740	8,026,173
Effect of exchange rate change on cash and cash equivalents	(3,348)	(1,577)	(14,633)
<b>Net increase (decrease) in cash and cash equivalents</b>	578	75,767	703,238
Cash and cash equivalents at beginning of period	112,835	121,734	1,129,888
Increase in cash and cash equivalents from newly consolidated subsidiary	11	-	-
<b>Cash and cash equivalents at end of period</b>	113,424	197,501	1,833,126

(Reference)

SEGMENT INFORMATION

Information about sales and operating income :

6 Months ended June 30, 2019	Millions of yen							
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Others	Elimination	Consolidated
<b>Sales</b>								
Outside customers	¥122,345	¥65,079	¥44,234	¥138,884	¥45,313	¥59,640	¥-	¥475,494
Inter-segment	5,135	8,446	354	3,829	3,705	4,663	(26,133)	-
Total	127,480	73,525	44,588	142,713	49,018	64,303	(26,133)	475,494
Operating income (loss)	¥8,465	¥5,522	¥947	¥71,837	¥480	¥612	(¥2,392)	¥85,471

6 Months ended June 30, 2020	Millions of yen								
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Showa Denko Materials	Others	Elimination	Consolidated
<b>Sales</b>									
Outside customers	¥91,028	¥64,358	¥44,049	¥39,995	¥35,414	¥-	¥51,777	¥-	¥326,621
Inter-segment	4,716	7,684	525	3,009	3,434	¥-	3,784	(23,151)	-
Total	95,743	72,041	44,574	43,004	38,848	¥-	55,561	(23,151)	326,621
Operating income (loss)	(¥3,667)	¥5,020	¥1,768	(¥22,905)	(¥205)	¥-	¥481	(¥6,287)	(¥25,795)

6 Months ended June 30, 2020	Thousands of U.S. dollars								
	Petrochemicals	Chemicals	Electronics	Inorganics	Aluminum	Showa Denko Materials	Others	Elimination	Consolidated
<b>Sales</b>									
Outside customers	\$844,882	\$597,342	\$408,843	\$371,221	\$328,699	\$-	\$480,576	\$-	\$3,031,563
Inter-segment	43,770	71,318	4,873	27,928	31,873	\$-	35,118	(214,880)	-
Total	888,652	668,660	413,716	399,149	360,572	\$-	515,694	(214,880)	3,031,563
Operating income (loss)	(\$34,032)	\$46,594	\$16,407	(\$212,595)	(\$1,902)	\$-	\$4,466	(\$58,356)	(\$239,419)