

May 11, 2018

Nissan Chemical,  
- where unique & solution meet

# Presentation for Investors

## FY2017 (April 1 – March 31, 2018) Financial Results

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Translation of presentation materials for the investor meeting held in Tokyo on May 11, 2018



NISSAN CHEMICAL INDUSTRIES, LTD.

# FY2017 PL<sup>(1)</sup>

(¥billion)

	FY2016			FY2017			Change			Change (%)	FY2017 Outlook as of Nov. 2017		
	1H	2H	Total	1H	2H	Total	1H	2H	Total	Total	1H Actual	2H	Total
Sales	84.5	95.8	180.3	91.0	102.4	Record 193.4	+6.5	+6.6	+13.1	+7%	91.0	101.0	192.0
Operating Profit	14.7	16.7	31.4	17.3	17.7	Record 35.0	+2.6	+1.0	+3.6	+11%	17.3	17.2	34.5
Non-Operating Income/Expenses	-0.5	0.8	0.3	0.5	0.7	1.2	+1.0	-0.1	+0.9	-	0.5	1.1	1.6
Ordinary Income	14.2	17.5	31.7	17.8	18.4	Record 36.2	+3.6	+0.9	+4.5	+14%	17.8	18.3	36.1
Extraordinary Income/Loss	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	0.0	0.0	0.0
Net Income (2)	10.6	13.4	24.0	13.2	13.9	Record 27.1	+2.6	+0.5	+3.1	+13%	13.2	13.8	27.0
EBITDA (3)	18.8	21.5	40.3	22.0	23.5	45.5	+3.2	+2.0	+5.2	+13%	22.0	23.4	45.4
EPS (¥/share)	69.00	87.97	156.97	87.40	92.90	180.30	+18.40	+4.93	+23.33	+15%	87.40	91.83	179.23
Dividend (¥/share)	24	28	52	32	36	68	+8	+8	+16		32	34	66
Total amount of Dividend	3.7	4.2	7.9	4.8	5.4	10.2	+1.1	+1.2	+2.3		4.8	5.1	9.9
OP Margin	17.4%	17.4%	17.4%	19.0%	17.3%	18.1%	+1.6%	-0.1%	+0.7%		19.0%	17.1%	18.0%
ROE	-	-	15.1%	-	-	16.1%	-	-	+1.0%		-	-	15.9%
FX Rate (¥/\$)	105	112		111	111						111	112	
Naphtha (¥/kl) (4)	31,400	38,200		37,700	46,200						37,700	36,500	
Comprehensive Income	7.4	16.4	23.8	16.7	14.1	30.8					16.7		

(1) FY2017 = April 1, 2017 - March 31, 2018

(2) Net income = Profit Attributable to Owners of Parent

(3) EBITDA = Operating Profit + Depreciation

(4) Based on Trade Statistics of Japan Ministry of Finance

# 2H FY2017 Review

## <vs. 2H FY2016>

(Sales)	◆Up	¥6.6 billion (+7%)
(OP)	◆Up	¥1.0 billion (+6%)
(Ordinary Income)	◆Up	¥0.9 billion (+5%)
(Net Income)	◆Up	¥0.5 billion (+4%)
(EPS)	◆Up	¥4.93 yen (+6%)

(+) Performance Materials, Agrochemicals, Trading  
(-) Chemicals, Pharmaceuticals  
(+) Performance Materials, Agrochemicals  
(±) Trading  
(-) Chemicals, Pharmaceuticals

## <vs. 2H FY2017 Outlook as of November 2017>

(Sales)	◆Up	¥1.4 billion
(OP)	◆Up	¥0.5 billion
(Non-Operating Income and Expenses)	◆Down	¥0.4 billion
(Ordinary Income)	◆Up	¥0.1 billion
(Net Income)	◆Up	¥0.1 billion
(EPS)	◆Up	¥1.07 yen

(+) Performance Materials, Pharmaceuticals  
(-) Chemicals, Agrochemicals, Trading  
(+) Performance Materials, Agrochemicals, Pharmaceuticals  
(-) Chemicals, Trading

# FY2017 Review

<vs. FY2016>

(Sales) ◆Up ¥13.1 billion (+7%)

(+) Chemicals, Performance Materials, Agrochemicals, Trading

(-) Pharmaceuticals

(OP) ◆Up ¥3.6 billion (+11%)

(+) Performance Materials, Agrochemicals, Trading

(-) Chemicals, Pharmaceuticals

(OP Margin) ◆18.1% More than 10% OP Margin in 15 consecutive years since FY2003

(Non-Operating Income and Expenses) ◆Up ¥0.9 billion

(Ordinary Income) ◆Up ¥4.5 billion (+14%)

(Net Income) ◆Up ¥3.1 billion (+13%)

(EPS) ◆Up ¥23.33 yen (+15%)

(ROE) ◆16.1% (FY2016: 15.1%)

★ OP and Ordinary Income renewed the highest results of a full year in four consecutive years.

★ Net Income renewed the highest results of a full year in five consecutive years.

★ Achieved OP, Ordinary Income and Net Income FY2018 goals of the Mid-Term Plan (see p63) one year in advance.

<Shareholder Return>

(Dividend) ◆1H ¥32, 2H ¥36, total ¥68/share, dividend payout ratio 37.7% (4.6% up vs. FY2016)  
(¥16/share up vs. FY2016, ¥2/share up vs. 2H FY2017 Outlook as of November 2017)

(Share Repurchases) ◆¥9.0 billion, 2.3 million shares completed in FY2017  
(Cancelled 3 million shares in May 2017 and August 2017)

(Total Payout Ratio) ◆70.7% (Achieved Mid-Term Plan target: 70%)

# 2H FY2017 PL

(¥billion)

	FY2016			FY2017			Change			FY2017 Outlook as of Nov. 2017		
	3Q	4Q	2H	3Q	4Q	2H	3Q	4Q	2H	3Q	4Q	2H
Sales	37.6	58.2	95.8	41.7	60.7	102.4	+4.1	+2.5	+6.6	41.3	59.7	101.0
Operating Profit	4.0	12.7	16.7	5.1	12.6	17.7	+1.1	-0.1	+1.0	4.4	12.8	17.2
Non-Operating Income/Expenses	1.1	-0.3	0.8	1.0	-0.3	0.7	-0.1	+0.0	-0.1	0.6	0.5	1.1
Ordinary Income	5.1	12.4	17.5	6.1	12.3	18.4	+1.0	-0.1	+0.9	5.0	13.3	18.3
Extraordinary Income/Loss	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0
Net Income (1)	3.6	9.8	13.4	4.5	9.4	13.9	+0.9	-0.4	+0.5	3.9	9.9	13.8
EBITDA (2)	6.1	15.4	21.5	7.8	15.7	23.5	+1.7	+0.3	+2.0	-	-	23.4
EPS (¥/share)	23.86	64.11	87.97	30.28	62.62	92.90	+6.42	-1.49	+4.93	-	-	91.83
Dividend (¥/share)	-	-	28	-	-	36	-	-	+8	-	-	34
Total amount of Dividend	-	-	4.2	-	-	5.4	-	-	+1.2	-	-	5.1
OP Margin	10.6%	21.9%	17.4%	12.3%	20.7%	17.3%	+1.7%	-1.2%	-0.1%	10.7%	21.5%	17.1%

(1) Net income = Profit Attributable to Owners of Parent

(2) EBITDA = Operating Profit + Depreciation

# 3Q FY2017 Review

## <vs. 3Q FY2016>

(Sales) ◆Up ¥4.1 billion (+11%)

(+) Chemicals, Performance Materials, Agrochemicals, Trading

(-) Pharmaceuticals

(OP) ◆Up ¥1.1 billion (+29%)

(+) Performance Materials, Agrochemicals

(±) Trading

(-) Chemicals, Pharmaceuticals

(Ordinary Income) ◆Up ¥1.0 billion (+20%)

(Net Income) ◆Up ¥0.9 billion (+25%)

(EPS) ◆Up ¥6.42 (+27%)

## <vs. 3Q FY2017 Outlook as of Nov. 2017>

(Sales) ◆Up ¥0.4 billion

(+) Performance Materials, Trading

(±) Chemicals, Pharmaceuticals

(-) Agrochemicals

(OP) ◆Up ¥0.7 billion

(+) Performance Materials, Agrochemicals, Pharmaceuticals

(±) Chemicals

(-) Trading

(Ordinary Income) ◆Up ¥1.1 billion

(Net Income) ◆Up ¥0.6 billion

# 4Q FY2017 Review

## <vs. 4Q FY2016>

(Sales) ◆ Up ¥2.5 billion (+4%)

(OP) ◆ Down ¥0.1 billion (-1%)

(Ordinary Income) ◆ Down ¥0.1 billion (-1%)

(Net Income) ◆ Down ¥0.4 billion (-4%)

(EPS) ◆ Down ¥1.49 (-2%)

(+) Performance Materials, Agrochemicals, Trading

(-) Chemicals, Pharmaceuticals

(+) Agrochemicals

(±) Performance Materials, Trading

(-) Chemicals, Pharmaceuticals

## <vs. 4Q FY2017 Outlook as of Nov. 2017>

(Sales) ◆ Up ¥1.0 billion

(OP) ◆ Down ¥0.2 billion

(Non-Operating Income and Expenses) ◆ Down ¥0.8 billion

(Ordinary Income) ◆ Down ¥1.0 billion

(Net Income) ◆ Down ¥0.5 billion

(+) Agrochemicals, Pharmaceuticals

(-) Chemicals, Performance Materials, Trading

(+) Agrochemicals, Pharmaceuticals

(-) Chemicals, Performance Materials, Trading

# FY2017

## Non-Operating Income/Expenses, Extraordinary Income/Loss, Comprehensive Income

	FY2016	FY2017	Change	(¥billion)
<b>Non-Operating Income</b>	2.25	2.94	+0.69	
Interest income, dividend income	0.75	0.84	+0.09	
Equity in earnings of affiliates	0.70	1.32	+0.62	
Foreign exchange gains	0.00	0.00	+0.00	
Others	0.80	0.78	-0.02	
<b>Non-Operating Expenses</b>	1.98	1.69	-0.29	
Interest expense	0.16	0.13	-0.03	
Foreign exchange losses	0.60	0.59	-0.01	
Loss on disposal of non-current assets	0.31	0.46	+0.15	
Others	0.91	0.51	-0.40	
<b>Extraordinary Income</b>	0.00	0.00	-	
<b>Extraordinary Loss</b>	0.00	0.00	-	
<b>Comprehensive Income</b>	23.77	30.76	+6.99	
Net income	24.03	27.14	+3.11	
Net income attributable to non-controlling interests	0.16	0.16	-0.00	
Valuation difference on available-for-sale securities	-0.44	3.57	+4.01	
Others	0.02	-0.11	-0.13	



(¥billion)

# FY2017 Cash Flows

	FY2016			FY2017			Change			FY2017 Outlook as of Nov. 2017		
	1H	2H	Total	1H	2H	Total	1H	2H	Total	1H Actual	2H	Total
<b>CF from operating activities</b>	29.4	3.1	32.5	30.0	7.7	37.7	+0.6	+4.6	+5.2	30.0	5.9	35.9
Income before income taxes & non-controlling interests	14.2	17.5	31.7	17.8	18.4	36.2	+3.6	+0.9	+4.5	17.8	18.3	36.1
Impairment loss	0.0	0.2	0.2	0.0	0.0	0.0	+0.0	-0.2	-0.2	0.0	0.0	0.0
Depreciation & Amortization	4.1	4.8	8.9	4.7	5.8	10.5	+0.6	+1.0	+1.6	4.7	6.2	10.9
Income taxes paid	-4.9	-4.1	-9.0	-3.7	-3.6	-7.3	+1.2	+0.5	+1.7	-3.7	-3.5	-7.2
Working capital, others	16.0	-15.3	0.7	11.2	-12.9	-1.7	-4.8	+2.4	-2.4	11.2	-15.1	-3.9
<b>CF from investing activities</b>	-4.5	-8.6	-13.1	-6.3	-8.9	-15.2	-1.8	-0.3	-2.1	-6.3	-12.0	-18.3
Purchase of PPE	-5.3	-7.1	-12.4	-6.4	-7.4	-13.8	-1.1	-0.3	-1.4	-6.4	-10.9	-17.3
Purchase and sales of investment securities	0.0	2.2	2.2	0.0	-0.7	-0.7	+0.0	-2.9	-2.9	0.0	0.1	0.1
Others	0.8	-3.7	-2.9	0.1	-0.8	-0.7	-0.7	+2.9	+2.2	0.1	-1.2	-1.1
<b>CF from financing activities</b>	-26.6	7.5	-19.1	-26.8	6.5	-20.3	-0.2	-1.0	-1.2	-26.8	10.6	-16.2
Cash dividends paid	-4.0	-3.7	-7.7	-4.3	-4.8	-9.1	-0.3	-1.1	-1.4	-4.3	-4.8	-9.1
Borrowings	-17.5	15.2	-2.3	-17.5	15.4	-2.1	+0.0	+0.2	+0.2	-17.5	15.4	-2.1
Share repurchase	-5.0	-4.0	-9.0	-5.0	-4.0	-9.0	+0.0	+0.0	+0.0	-5.0	0.0	-5.0
Others	-0.1	0.0	-0.1	0.0	-0.1	-0.1	+0.1	-0.1	+0.0	0.0	0.0	0.0
Effect of exchange rate change on cash & cash equivalents	-0.3	0.4	0.1	0.1	-0.3	-0.2	+0.4	-0.7	-0.3	0.1	-0.1	0.0
<b>Change in cash &amp; cash equivalents</b>	-2.0	2.4	0.4	-3.0	5.0	2.0	-1.0	+2.6	+1.6	-3.0	4.4	1.4
<b>Cash &amp; cash equivalents at end of period</b>	33.3	35.7		32.7	37.7		-0.6	+2.0		32.7	37.1	

# FY2017 Balance Sheets

(¥billion)

	2017/3	2018/3	Change
<b>Current assets</b>	<b>140.5</b>	<b>148.6</b>	<b>+8.1</b>
Cash	35.7	37.7	+2.0
Accounts receivable(1)	60.1	65.4	+5.3
Inventories	36.4	37.8	+1.4
Others	8.3	7.7	-0.6
<b>Fixed assets</b>	<b>91.2</b>	<b>100.4</b>	<b>+9.2</b>
Total PPE	52.0	54.5	+2.5
Intangible assets	1.6	1.8	+0.2
Investment securities	32.5	38.5	+6.0
Others	5.1	5.6	+0.5
<b>Total assets</b>	<b>231.7</b>	<b>249.0</b>	<b>+17.3</b>

(1),(2) Due to a bank holiday on March 31, 2018,  
Accounts Receivable up ¥4.4 billion,  
Accounts Payable up ¥2.8 billion

	2017/3	2018/3	Change
<b>Liabilities</b>	<b>68.0</b>	<b>72.6</b>	<b>+4.6</b>
Accounts payable(2)	14.9	18.6	+3.7
Borrowings	30.8	28.6	-2.2
Others	22.3	25.4	+3.1
<b>Net assets</b>	<b>163.7</b>	<b>176.4</b>	<b>+12.7</b>
<b>Shareholders' equity</b>	<b>151.3</b>	<b>160.4</b>	<b>+9.1</b>
Valuation difference on available-for-sale securities	10.1	13.7	+3.6
Foreign currency translation adjustment	0.2	0.1	-0.1
Non-controlling interests	1.7	1.8	+0.1
Remeasurements of defined benefit plans	0.4	0.4	+0.0
<b>Total liabilities &amp; Net assets</b>	<b>231.7</b>	<b>249.0</b>	<b>+17.3</b>

• D/E Ratio (3) -3.2% -5.7%

• Equity Ratio 69.9% 70.1%

• Change in shareholders' equity +9.1

= Net Income 27.1 - Dividend and others 18.0

(3)D/E Ratio = (Borrowings - Cash) / Shareholders' equity 10

# FY2018 Outlook

(¥billion)

	FY2017 Actual					FY2018 Outlook					Change					Change (%)
	1Q	2Q	1H	2H	Total	1Q	2Q	1H	2H	Total	1Q	2Q	1H	2H	Total	Total
Sales	47.4	43.6	91.0	102.4	193.4	50.9	45.8	96.7	107.3	Record 204.0	+3.5	+2.2	+5.7	+4.9	+10.6	+5%
Operating Profit	10.0	7.3	17.3	17.7	35.0	10.5	7.9	18.4	18.4	Record 36.8	+0.5	+0.6	+1.1	+0.7	+1.8	+5%
Non-Operating Income/Expenses	0.9	-0.4	0.5	0.7	1.2	0.8	-0.4	0.4	0.8	1.2	-0.1	-0.0	-0.1	+0.1	-0.0	-4%
Ordinary Income	10.9	6.9	17.8	18.4	36.2	11.3	7.5	18.8	19.2	Record 38.0	+0.4	+0.6	+1.0	+0.8	+1.8	+5%
Extraordinary Income/Loss	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-	-
Net Income	7.9	5.3	13.2	13.9	27.1	8.4	5.7	14.1	14.4	Record 28.5	+0.5	+0.4	+0.9	+0.5	+1.4	+5%
EBITDA (1)	12.2	9.8	22.0	23.5	45.5	-	-	23.6	24.8	48.4	-	-	+1.6	+1.3	+2.9	+6%
EPS (¥/share) (2)	52.22	35.18	87.40	92.90	180.30	-	-	94.85	97.08	191.93	-	-	+7.45	+4.18	+11.63	+6%
Dividend (¥/share)	-	-	32	36	68	-	-	38	40	78	-	-	+6	+4	+10	
Total amount of Dividend (2)	-	-	4.8	5.4	10.2	-	-	5.6	5.9	11.5	-	-	+0.8	+0.5	+1.3	
OP Margin	21.2%	16.6%	19.0%	17.3%	18.1%	20.6%	17.2%	19.0%	17.1%	18.0%	-0.6%	+0.6%	+0.0%	-0.2%	-0.1%	
ROE (2)	-	-	-	-	16.1%	-	-	-	-	15.8%						-0.3%
FX Rate (¥/\$)	111	111	111	111		-	-	107	107							
Naphtha (¥/kl)	39,100	36,100	37,700	46,200		-	-	48,500	48,500							
Comprehensive income	9.5	7.2	16.7	14.1	30.8											

(1) EBITDA = Operating Profit + Depreciation

(2) FY2018 Outlook including effects of FY2018 share repurchase program announced on May 11, 2018

# FY2018 Outlook

## <vs. FY2017>

(Sales)	◆Up	¥10.6 billion (+5%)	(+) Chemicals, Performance Materials, Agrochemicals, Trading (-) Pharmaceuticals
(OP)	◆Up	¥1.8 billion (+5%)	(+) Chemicals, Agrochemicals, Pharmaceuticals, Trading (-) Performance Materials
(Ordinary Income)	◆Up	¥1.8 billion (+5%)	
(Net Income)	◆Up	¥1.4 billion (+5%)	
(EPS)	◆Up	¥11.63 yen (+6%)	
(ROE)	◆15.8%	(FY2017 16.1%)	

- ★Sales, OP, Ordinary Income, Net Income expected to renew the highest results of a full year recorded in FY2017
- ★Exceeding OP, Ordinary Income and Net Income FY2018 goals of the Mid-Term Plan (see p63)

## <Shareholder Return>

- (Dividend) ◆1H ¥38, 2H ¥40, total ¥78/share, dividend payout ratio 40.6% (2.9% up vs. FY2017)  
(¥10/share up vs. FY2017)
- (Share Repurchases) ◆¥5.0 billion, 1.3 million shares (announced on May 11, 2018)
- (Total Payout Ratio) ◆58.1% (Based on ¥78/share dividend and ¥5.0 billion share repurchase)  
(Mid-Term Plan target: maintain 70%)

# 1Q and 1H FY2018 Outlook

## <1Q vs. 1Q FY2017>

**(Sales)** ◆Up    **¥3.5billion**    **(+7%)**    **(+) Chemicals, Performance Materials, Agrochemicals, Trading**

**(-) Pharmaceuticals**

**(OP)** ◆Up    **¥0.5billion**    **(+5%)**    **(+) Chemicals, Agrochemicals, Trading**

**(-) Performance Materials, Pharmaceuticals**

**(Ordinary Income)** ◆Up    **¥0.4billion**    **(+4%)**

**(Net Income)** ◆Up    **¥0.5billion**    **(+6%)**

## <1H vs. 1H FY2017>

**(Sales)** ◆Up    **¥5.7billion**    **(+6%)**    **(+) Chemicals, Performance Materials, Agrochemicals, Pharmaceuticals, Trading**

**(OP)** ◆Up    **¥1.1billion**    **(+7%)**    **(+) Chemicals, Agrochemicals, Pharmaceuticals, Trading**

**(-) Performance Materials**

**(Ordinary Income)** ◆Up    **¥1.0billion**    **(+5%)**

**(Net Income)** ◆Up    **¥0.9billion**    **(+7%)**

# FY2018 Outlook

## Non-Operating Income/Expenses, Extraordinary Income/Loss, Comprehensive Income

(¥billion)

	FY2017 Actual	FY2018 Outlook	Change
<b>Non-Operating Income</b>	2.94	2.66	-0.28
Interest income, dividend income	0.84	0.74	-0.10
Equity in earnings of affiliates	1.32	1.01	-0.31
Foreign exchange gains	0.00	0.00	+0.00
Others	0.78	0.91	+0.13
<b>Non-Operating Expenses</b>	1.69	1.42	-0.27
Interest expense	0.13	0.10	-0.03
Foreign exchange losses	0.59	0.90	+0.31
Loss on disposal of non-current assets	0.46	0.00	-0.46
Others	0.51	0.42	-0.09
<b>Extraordinary Income</b>	0.00	0.00	-
<b>Extraordinary Loss</b>	0.00	0.00	-
<b>Comprehensive Income</b>	30.76	-	-
Net income	27.14	-	-
Net income attributable to non-controlling interests	0.16	-	-
Valuation difference on available-for-sale securities	3.57	-	-
Others	-0.11	-	-

# FY2018 Cash Flows Outlook

(¥billion)

	FY2017 Actual	FY2018 Outlook
<b>CF from operating activities</b>	<b>37.7</b>	<b>34.6</b>
Income before income taxes & non-controlling interests	36.2	38.0
Impairment loss	0.0	0.0
Depreciation & Amortization	10.5	11.6
Income taxes paid	-7.3	-9.6
Working capital, others	-1.7	-5.4
<b>CF from investing activities</b>	<b>-15.2</b>	<b>-16.1</b>
Purchase of PPE	-13.8	-15.0
Purchase and sales of investment securities	-0.7	0.0
Others	-0.7	-1.1
<b>CF from financing activities</b>	<b>-20.3</b>	<b>-18.0</b>
Cash dividends paid	-9.1	-11.0
Borrowings	-2.1	-2.0
Share repurchase	-9.0	-5.0
Others	-0.1	0.0
Effect of exchange rate change on cash & cash equivalents	-0.2	0.0
<b>Change in cash &amp; cash equivalents</b>	<b>2.0</b>	<b>0.5</b>
<b>Cash &amp; cash equivalents at end of period</b>	<b>37.7</b>	<b>38.2</b>

(Blank)



# FY2017 Sales by Segment (1)

(¥billion)

	FY2016							FY2017							Change						FY2017 Outlook as of Nov. 2017					
	1Q	2Q	1H	3Q	4Q	2H	Total	1Q	2Q	1H	3Q	4Q	2H	Total	1Q	2Q	1H	3Q	4Q	2H	Total	1H Actual	3Q	4Q	2H	Total
<b>Chem</b>	8.5	8.0	16.5	9.1	9.2	18.3	34.8	8.8	7.9	16.7	9.2	9.0	18.2	34.9	+0.3	-0.1	+0.2	+0.1	-0.2	-0.1	+0.1	16.7	9.2	9.2	18.4	35.1
<b>Fine</b>	2.8	2.5	5.3	2.7	2.7	5.4	10.7	2.8	2.5	5.3	2.8	2.5	5.3	10.6	-0.0	-0.0	-0.0	+0.1	-0.2	-0.1	-0.1	5.3	2.6	2.5	5.1	10.4
<b>Basic</b>	5.7	5.5	11.2	6.4	6.5	12.9	24.1	6.0	5.4	11.4	6.4	6.5	12.9	24.3	+0.3	-0.1	+0.2	-0.0	-0.0	-0.0	+0.2	11.4	6.6	6.7	13.3	24.7
<b>P.M</b>	12.6	12.9	25.5	13.8	13.5	27.3	52.8	14.1	15.0	29.1	15.1	14.6	29.7	58.8	+1.5	+2.1	+3.6	+1.3	+1.1	+2.4	+6.0	29.1	14.6	14.8	29.4	58.5
<b>Agro</b>	14.5	9.5	24.0	4.2	23.8	28.0	52.0	14.6	11.5	26.1	6.4	25.6	32.0	58.1	+0.1	+2.0	+2.1	+2.2	+1.8	+4.0	+6.1	26.1	7.0	25.1	32.1	58.2
<b>Pharma</b>	2.2	1.5	3.7	2.4	1.9	4.3	8.0	2.1	1.4	3.5	2.3	1.7	4.0	7.5	-0.1	-0.1	-0.2	-0.1	-0.2	-0.3	-0.5	3.5	2.3	1.5	3.8	7.3
<b>Trading</b>	14.4	13.2	27.6	13.7	13.9	27.6	55.2	14.6	14.5	29.1	15.9	14.5	30.4	59.5	+0.2	+1.3	+1.5	+2.2	+0.6	+2.8	+4.3	29.1	15.8	15.4	31.2	60.3
<b>Others</b>	4.0	4.6	8.6	5.8	9.6	15.4	24.0	5.4	4.3	9.7	4.6	7.2	11.8	21.5	+1.4	-0.3	+1.1	-1.2	-2.4	-3.6	-2.5	9.7	4.5	7.2	11.7	21.4
<b>Adjust</b>	-11.1	-10.3	-21.4	-11.4	-13.7	-25.1	-46.5	-12.2	-11.0	-23.2	-11.8	-11.9	-23.7	-46.9	-1.1	-0.7	-1.8	-0.4	+1.8	+1.4	-0.4	-23.2	-12.1	-13.5	-25.6	-48.8
<b>Total</b>	45.1	39.4	84.5	37.6	58.2	95.8	180.3	47.4	43.6	91.0	41.7	60.7	102.4	193.4	+2.3	+4.2	+6.5	+4.1	+2.5	+6.6	+13.1	91.0	41.3	59.7	101.0	192.0

(1) Including inter-segment sales/transfers

# FY2017 OP by Segment

(¥billion)

	FY2016							FY2017							Change							FY2017 Outlook as of Nov. 2017				
	1Q	2Q	1H	3Q	4Q	2H	Total	1Q	2Q	1H	3Q	4Q	2H	Total	1Q	2Q	1H	3Q	4Q	2H	Total	1H Actual	3Q	4Q	2H	Total
Chem	1.5	-0.2	1.3	1.3	1.2	2.5	3.8	1.5	-0.2	1.3	1.2	0.9	2.1	3.4	+0.0	-0.0	-0.0	-0.1	-0.3	-0.4	-0.4	1.3	1.2	1.2	2.4	3.7
P.M	3.0	3.2	6.2	3.8	2.5	6.3	12.5	3.6	4.1	7.7	4.0	2.5	6.5	14.2	+0.6	+0.9	+1.5	+0.2	-0.0	+0.2	+1.7	7.7	3.3	2.9	6.2	13.9
Agro	4.5	2.4	6.9	-2.0	8.3	6.3	13.2	4.5	3.6	8.1	-0.6	8.9	8.3	16.4	+0.0	+1.2	+1.2	+1.4	+0.6	+2.0	+3.2	8.1	-0.8	8.3	7.5	15.6
Pharma	0.6	0.0	0.6	0.8	0.3	1.1	1.7	0.5	0.0	0.5	0.6	0.1	0.7	1.2	-0.1	-0.0	-0.1	-0.2	-0.2	-0.4	-0.5	0.5	0.5	0.0	0.5	1.0
Trading	0.4	0.4	0.8	0.5	0.4	0.9	1.7	0.4	0.5	0.9	0.5	0.4	0.9	1.8	-0.0	+0.1	+0.1	+0.0	-0.0	+0.0	+0.1	0.9	0.6	0.5	1.1	2.0
Others	0.0	0.0	0.0	0.2	0.8	1.0	1.0	0.1	0.1	0.2	0.1	0.3	0.4	0.6	+0.1	+0.1	+0.2	-0.1	-0.5	-0.6	-0.4	0.2	0.0	0.5	0.5	0.7
Adjust	-0.5	-0.6	-1.1	-0.6	-0.8	-1.4	-2.5	-0.6	-0.8	-1.4	-0.7	-0.5	-1.2	-2.6	-0.1	-0.2	-0.3	-0.1	+0.3	+0.2	-0.1	-1.4	-0.4	-0.6	-1.0	-2.4
<b>Total</b>	9.5	5.2	14.7	4.0	12.7	16.7	31.4	10.0	7.3	17.3	5.1	12.6	17.7	35.0	+0.5	+2.1	+2.6	+1.1	-0.1	+1.0	+3.6	17.3	4.4	12.8	17.2	34.5

# FY2018 Sales Outlook by Segment (1)

(¥billion)

	FY2017 Actual					FY2018 Outlook					Change				
	1Q	2Q	1H	2H	Total	1Q	2Q	1H	2H	Total	1Q	2Q	1H	2H	Total
<b>Chem</b>	8.8	7.9	16.7	18.2	34.9	9.2	9.0	18.2	19.8	38.0	+0.4	+1.1	+1.5	+1.6	+3.1
<b>Fine Chemicals</b>	2.8	2.5	5.3	5.3	10.6	2.7	2.7	5.4	5.9	11.3	-0.1	+0.2	+0.1	+0.6	+0.7
<b>Basic Chemicals</b>	6.0	5.4	11.4	12.9	24.3	6.5	6.3	12.8	13.9	26.7	+0.5	+0.9	+1.4	+1.0	+2.4
<b>Performance Materials</b>	14.1	15.0	29.1	29.7	58.8	15.2	15.4	30.6	31.9	62.5	+1.1	+0.4	+1.5	+2.2	+3.7
<b>Agro</b>	14.6	11.5	26.1	32.0	58.1	17.3	11.6	28.9	34.1	63.0	+2.7	+0.1	+2.8	+2.1	+4.9
<b>Pharma</b>	2.1	1.4	3.5	4.0	7.5	1.9	1.9	3.8	3.4	7.2	-0.2	+0.5	+0.3	-0.6	-0.3
<b>Trading</b>	14.6	14.5	29.1	30.4	59.5	18.0	14.6	32.6	32.1	64.7	+3.4	+0.1	+3.5	+1.7	+5.2
<b>Others</b>	5.4	4.3	9.7	11.8	21.5	4.5	7.3	11.8	11.8	23.6	-0.9	+3.0	+2.1	+0.0	+2.1
<b>Adjustment</b>	-12.2	-11.0	-23.2	-23.7	-46.9	-15.2	-14.0	-29.2	-25.8	-55.0	-3.0	-3.0	-6.0	-2.1	-8.1
<b>Total</b>	47.4	43.6	91.0	102.4	193.4	50.9	45.8	96.7	107.3	204.0	+3.5	+2.2	+5.7	+4.9	+10.6

(1) Including inter-segment sales/transfers

# FY2018 OP Outlook by Segment

(¥billion)

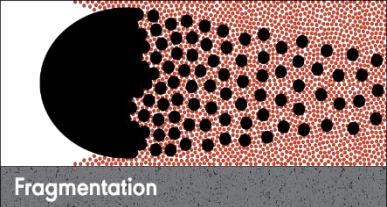
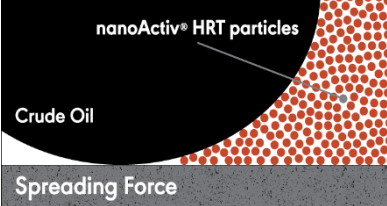
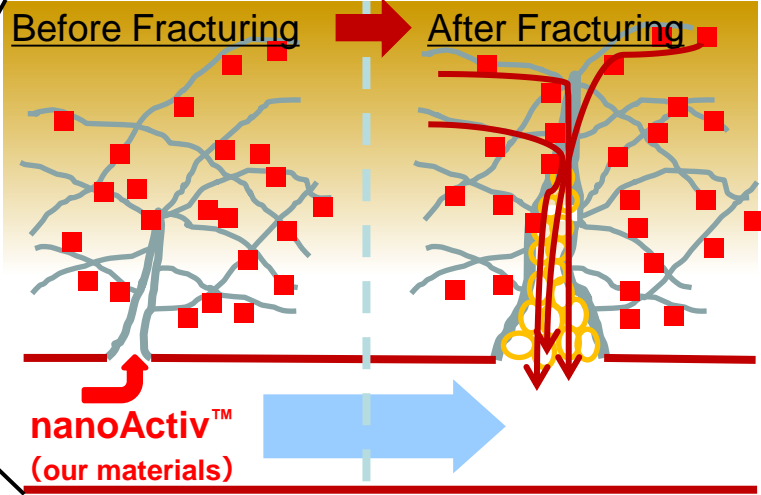
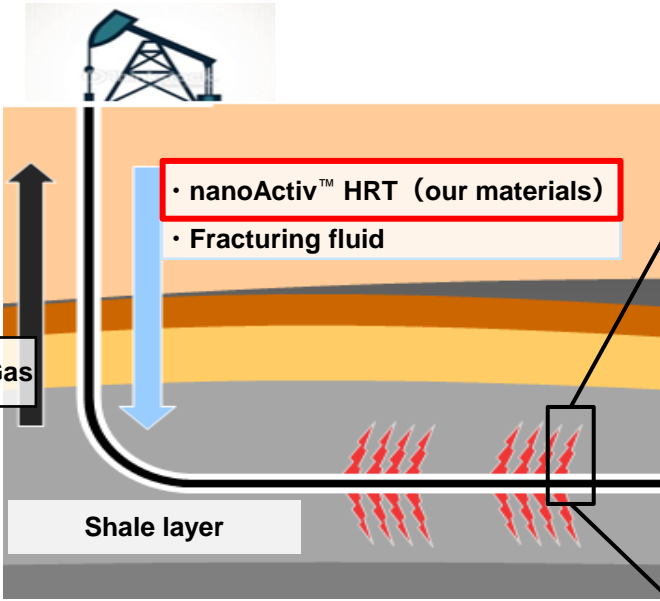
	FY2017 Actual					FY2018 Outlook					Change				
	1Q	2Q	1H	2H	Total	1Q	2Q	1H	2H	Total	1Q	2Q	1H	2H	Total
Chem	1.5	-0.2	1.3	2.1	3.4	1.7	-0.2	1.5	2.4	3.9	+0.2	+0.0	+0.2	+0.3	+0.5
Performance Materials	3.6	4.1	7.7	6.5	14.2	3.3	3.5	6.8	7.3	14.1	-0.3	-0.6	-0.9	+0.8	-0.1
Agro	4.5	3.6	8.1	8.3	16.4	5.6	4.4	10.0	7.7	17.7	+1.1	+0.8	+1.9	-0.6	+1.3
Pharma	0.5	0.0	0.5	0.7	1.2	0.3	0.3	0.6	0.9	1.5	-0.2	+0.3	+0.1	+0.2	+0.3
Trading	0.4	0.5	0.9	0.9	1.8	0.5	0.5	1.0	1.0	2.0	+0.1	+0.0	+0.1	+0.1	+0.2
Others	0.1	0.1	0.2	0.4	0.6	0.0	0.1	0.1	0.1	0.2	-0.1	+0.0	-0.1	-0.3	-0.4
Adjustment	-0.6	-0.8	-1.4	-1.2	-2.6	-0.9	-0.7	-1.6	-1.0	-2.6	-0.3	+0.1	-0.2	+0.2	-0.0
<b>Total</b>	<b>10.0</b>	<b>7.3</b>	<b>17.3</b>	<b>17.7</b>	<b>35.0</b>	<b>10.5</b>	<b>7.9</b>	<b>18.4</b>	<b>18.4</b>	<b>36.8</b>	<b>+0.5</b>	<b>+0.6</b>	<b>+1.1</b>	<b>+0.7</b>	<b>+1.8</b>

# FY2018 Sales Outlook of Future Growth Engines

(1) Including R&D costs deduction due to the sample shipments

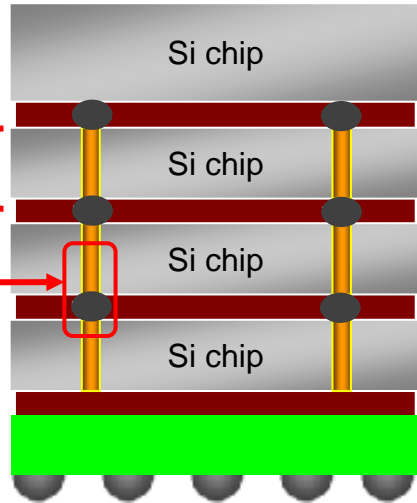
FY2018 Sales Outlook Level (1)	Below ¥0.3 billion	¥0.3 to ¥0.6 billion	¥0.6 to ¥0.9 billion	Total
<b>Chem</b>	New TEPIC (Liquid type) (Fine Chemicals)			<b>¥0.1 billion</b>
<b>Performance Materials</b>	<p>HYPERTECH (High refractive) (Display, Others)</p> <p>Hole injection layer materials for OLED (Display, Others)</p> <p>Alignment materials for LC retarder (Display, Others)</p> <p>Repellant bank layer materials (Display, Others)    Light control film materials (Display, Others)</p> <p>Organosol (Insulation CTE) (Inorganic, Organo/Monomer sol)</p> <p>New high refractive materials (IM layer film) (Inorganic, Others)</p>	<p>3D packaging process materials (Semis, Others)</p> <p>EUV under layer (Semis, Others)</p> <p>CMOS image sensor materials (Semis, Others)</p>	Oilfield materials (Inorganic)	<b>¥2.6 billion</b>
<b>Agro</b>	NEXTER (Agro, Licensed-in)	<p>GRACIA (Agro, In-house)</p> <p>TRANSFORM™/EXCEED™ (Agro, Licensed-in)</p>		<b>¥0.9 billion</b>
<b>Pharma, Others</b>	<p>New GE API product (Custom Chemicals)    New GE API product (Custom Chemicals)</p> <p>3D Cell culture medium</p>	Maxacalcitol (Custom Chemicals)		<b>¥0.6 billion</b>
<b>Total ¥4.2 billion</b>				

# Oilfield Materials



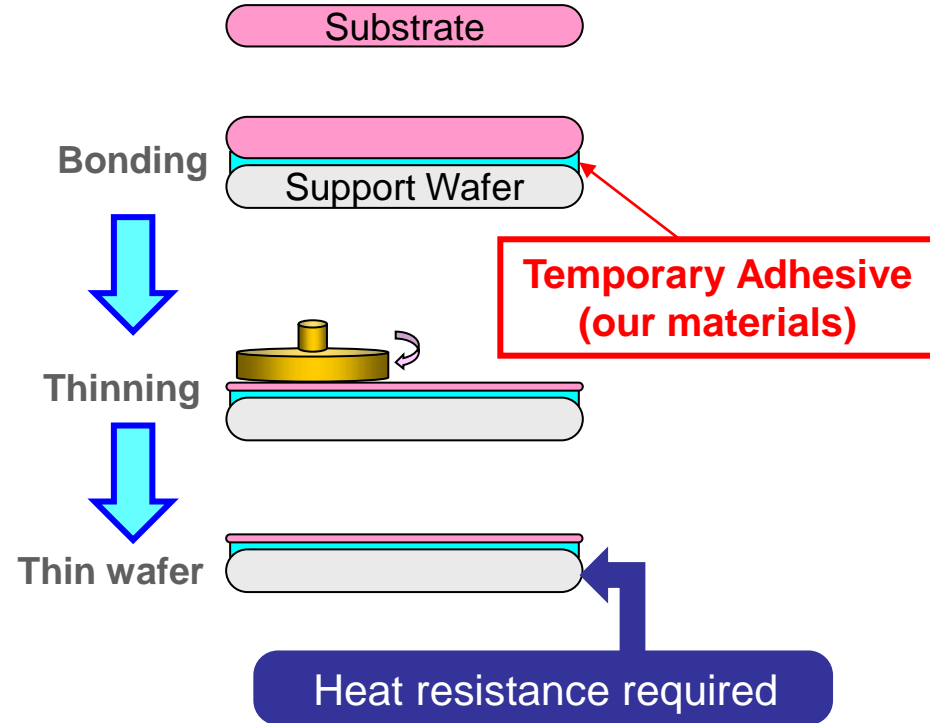
# 3D Packaging Process Materials

## TSV (Through silicon via) technology

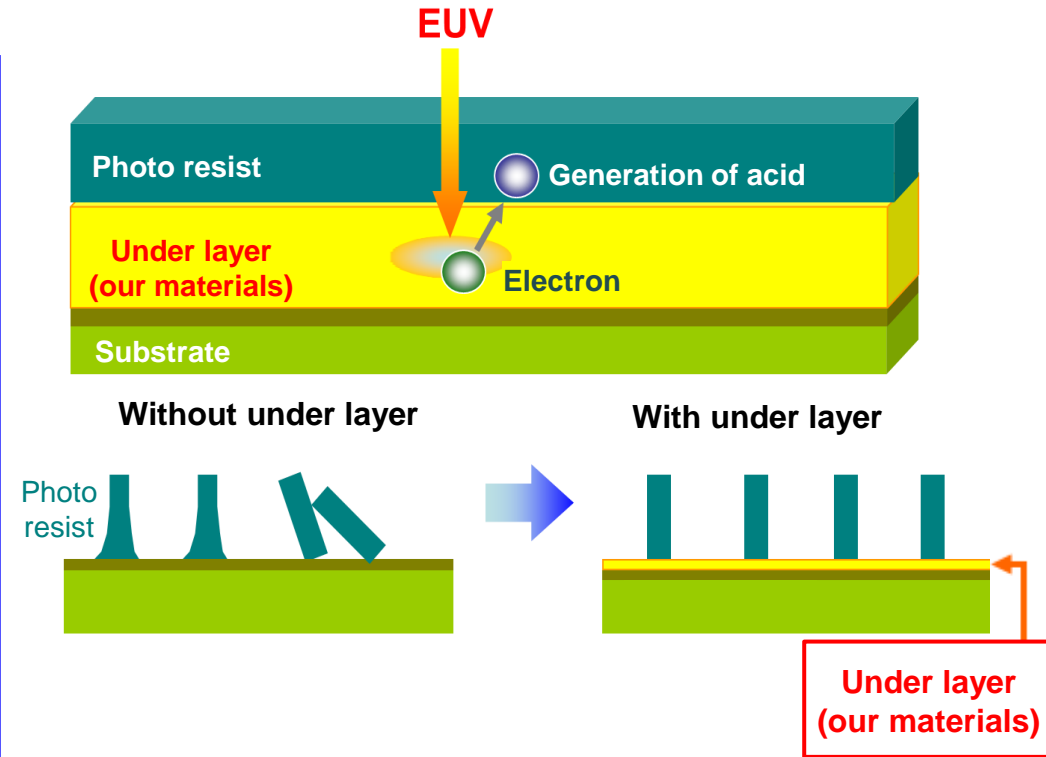
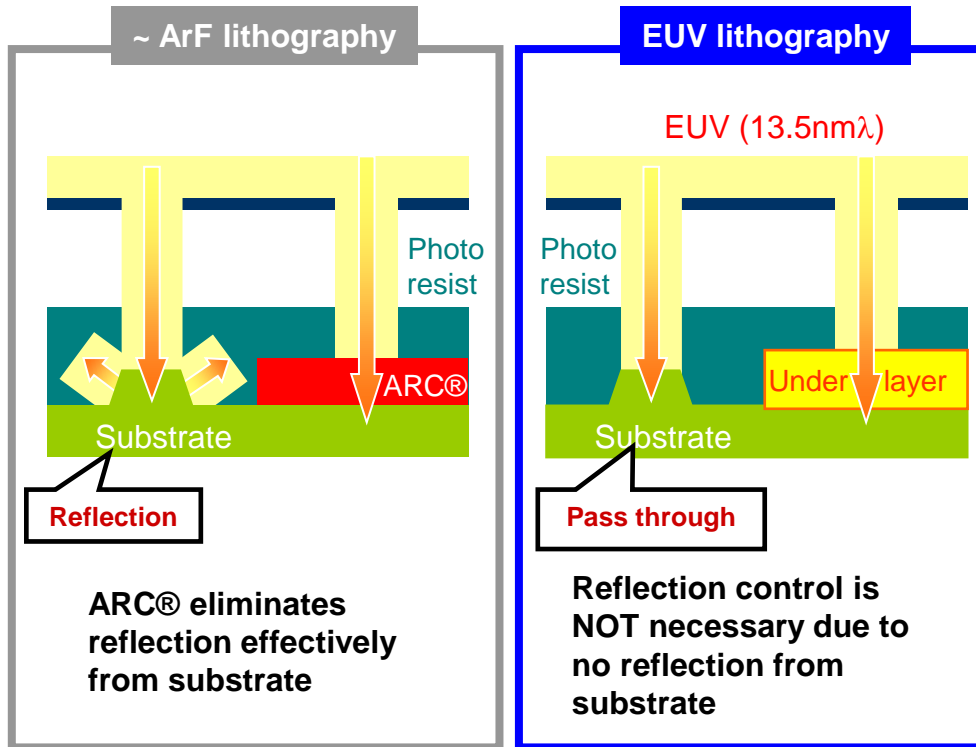


- Need for thinner substrate
- High temperature process required for TSV

## Using Temporary Adhesive system

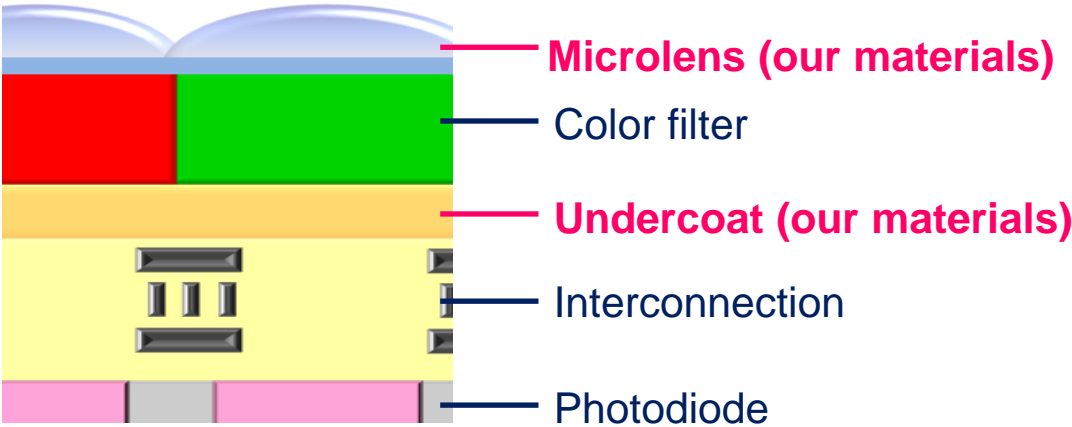
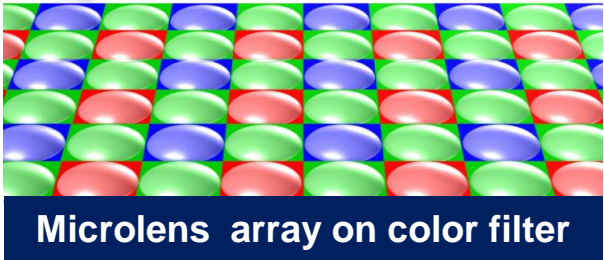
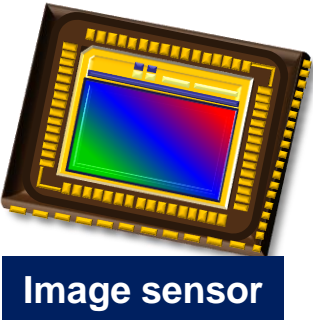


# EUV Under Layer



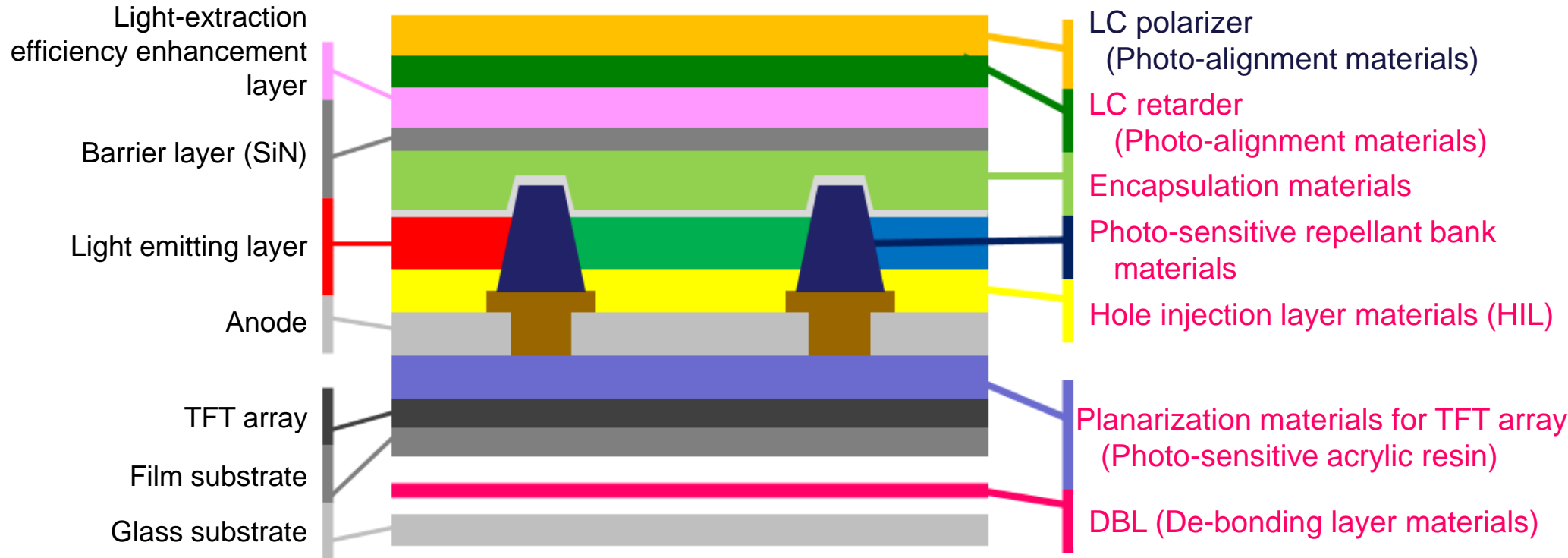


# CMOS Image Sensor Materials



# OLED-related Materials

## Our Materials

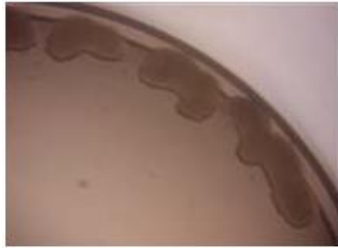


# 3D Cell Culture Medium

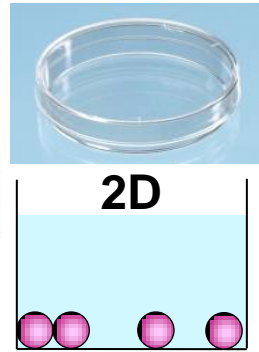
3D cell culture maintains and promotes cell proliferation and functions in non-adhesion condition.

Existing method

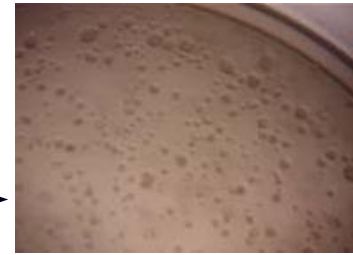
Petri dishes



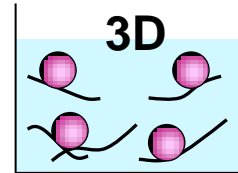
Cells are too aggregated,  
too big for mass production



New method



Our materials equalize the size of cells.



Effects

Able to form cell sphere

Experiments with cells near to the living body are possible.

Culture container becomes 3D.

More efficient and cost saving cell culture.

Future plans

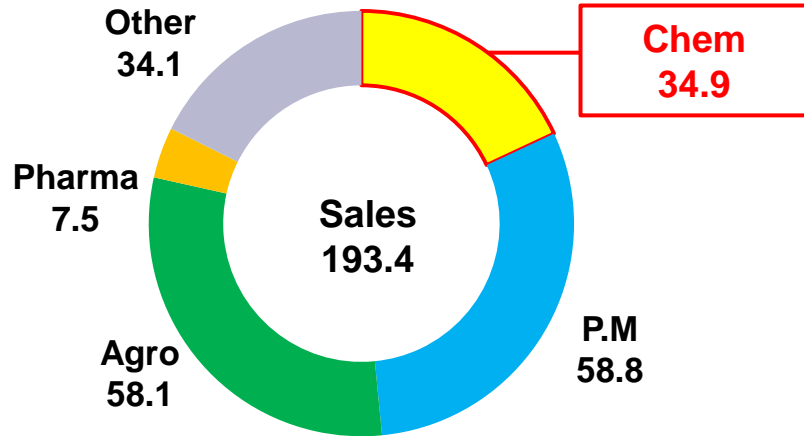
Apply to biomedicine and regenerative medicine fields

Efficient and greater scale cell culture

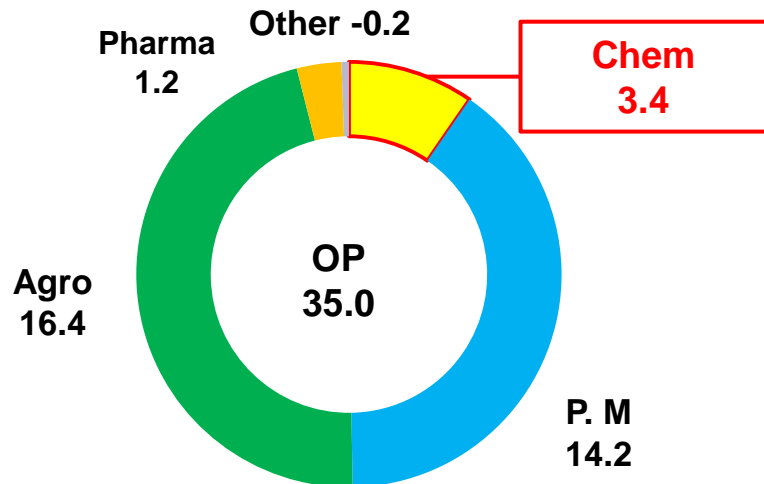
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# Chemicals – (A) Recent Financial Performance

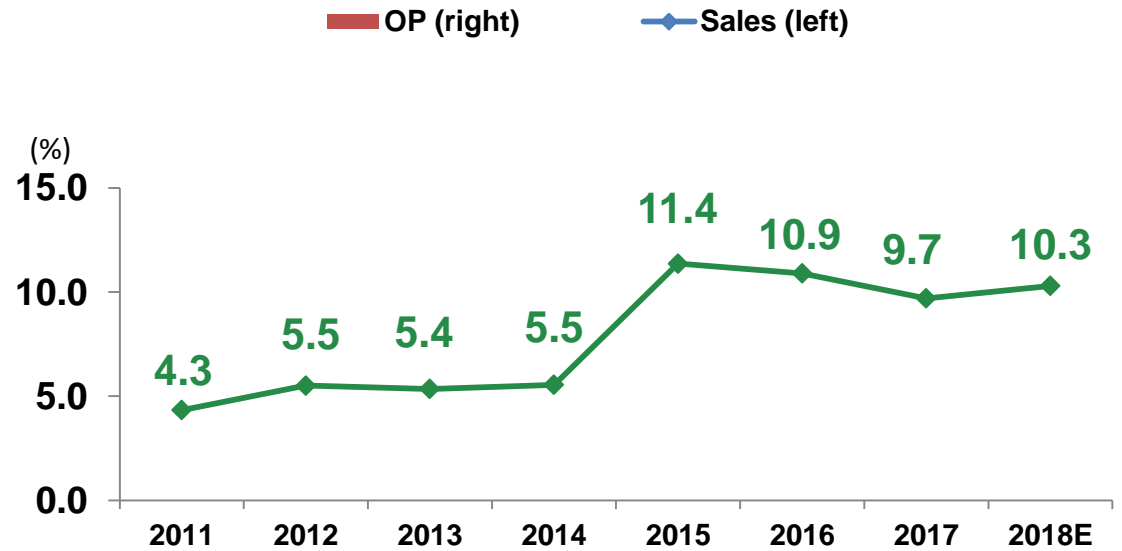
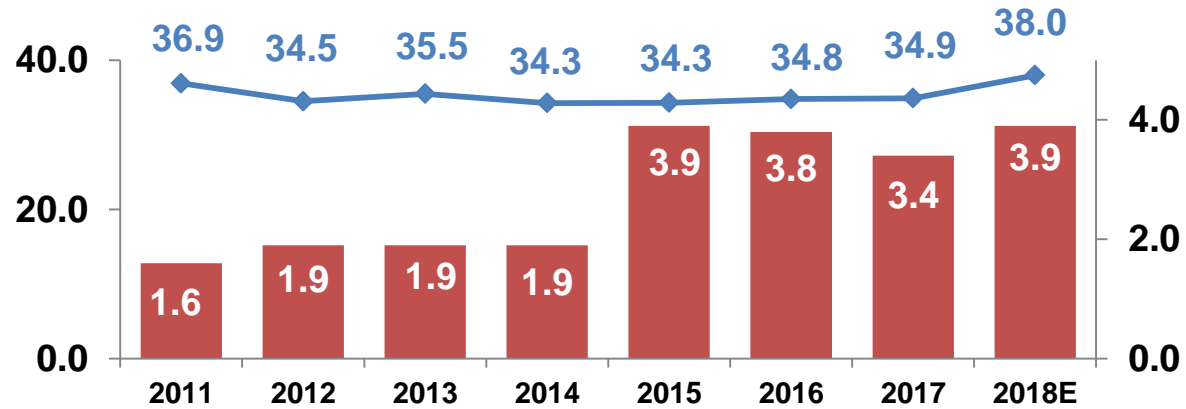
## 1. FY2017 Sales Distribution (¥billion)



## 2. FY2017 OP Distribution (¥billion)



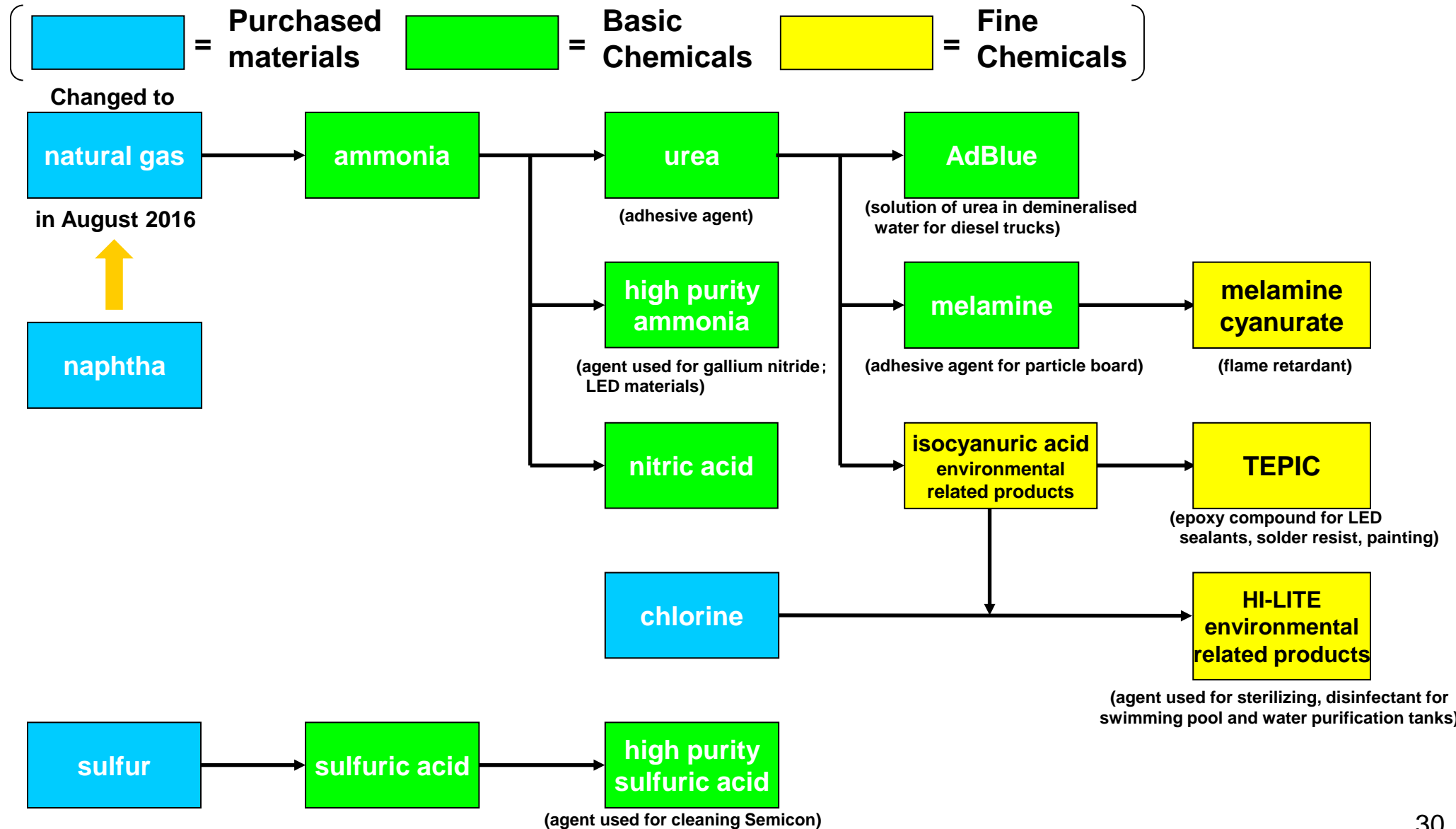
## 3. Recent Financial Performance (¥billion)



OP margin

# Chemicals – (B) Flow Chart of Selected Basic and Fine Chemicals Products

- ◆ Core products of Basic Chemicals : Ammonia related products and sulfuric acid related products
- ◆ FY2017 ammonia domestic production capacity share 11%, high percentage of self-consumption of ammonia



# Chemicals – (C-1)

## Ammonia Feedstock Change Project

### ◆Project:

Change of feedstock for ammonia production at Toyama Plant from naphtha to natural gas

### ◆Purpose:

To pursue more stable profitability from ammonia and its derivative products by using natural gas

### ◆Construction Cost:

¥ 1.09 billion

### ◆Completion Period:

Completed in August 2016 as scheduled

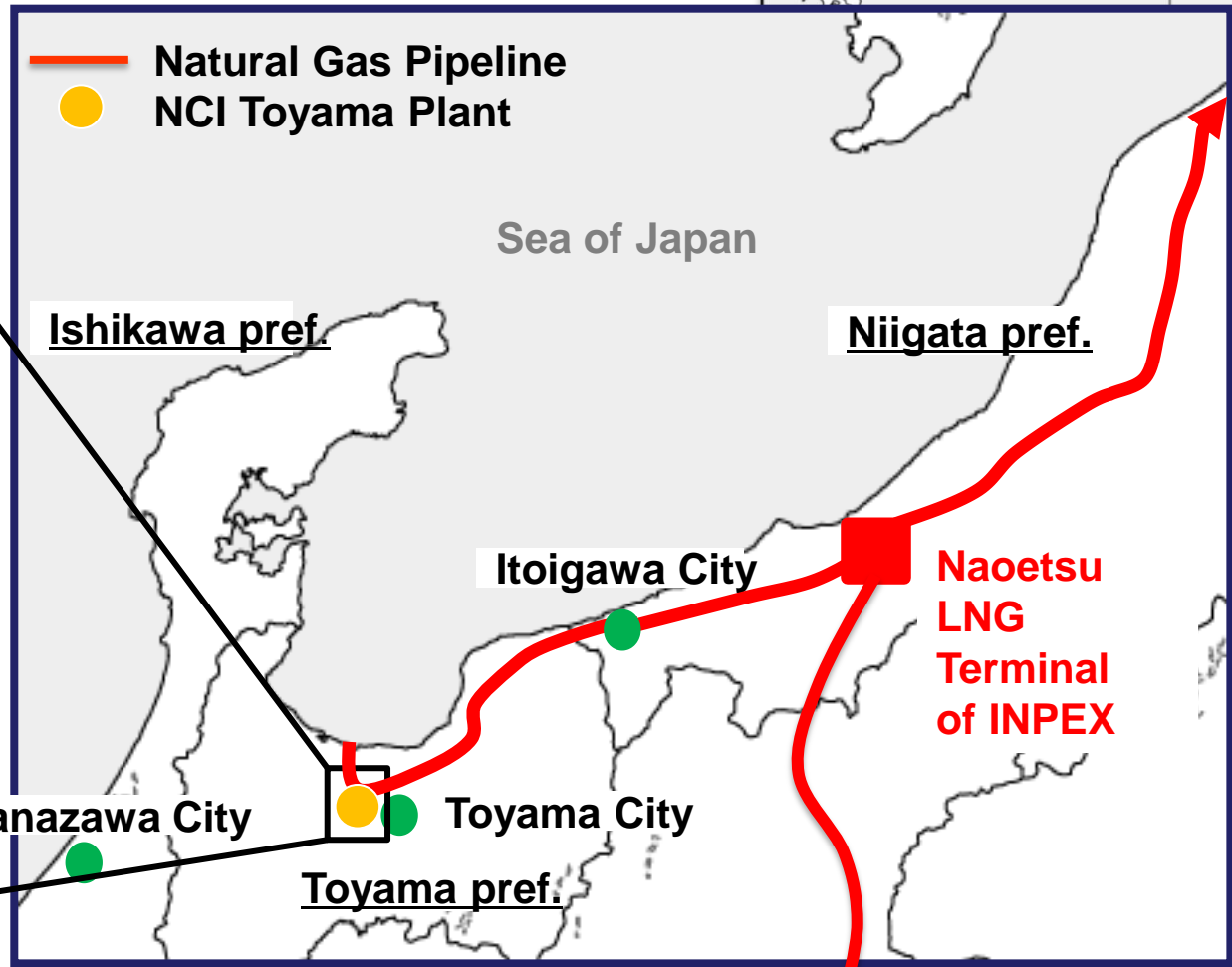
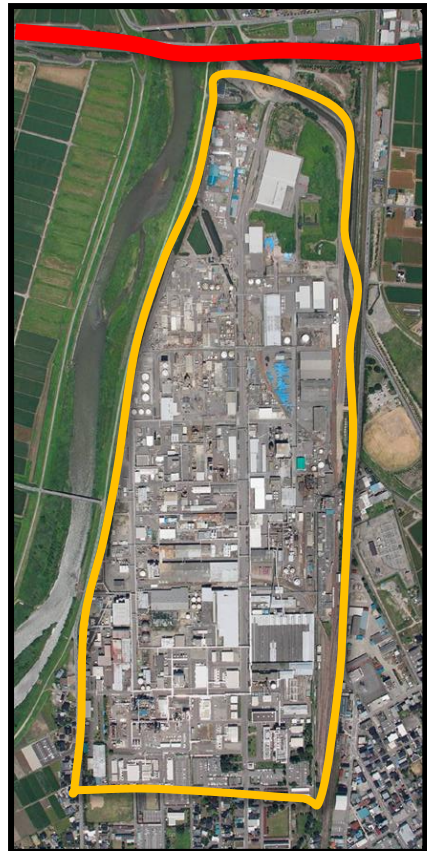
### ◆Extraordinary Loss:

Extraordinary loss of ¥ 704 million incurred in 3Q FY2014 (fiscal year ending in March 2015) as cost for dismantling the existing naphtha pipeline after completion of the project

# Chemicals – (C-2)

## Ammonia Feedstock Change Project

- Natural Gas Pipeline
- NCI Toyama Plant





# Chemicals – (D) Fine Chemicals Subsegment

## FY2017 Sales Review

### <1H FY2017 vs. 1H FY2016>

- ◆ TEPIC : Export sales for general applications up, sales for electronic materials up
- ◆ Environmental related products : Domestic sales down (absence of one time large order in 1H FY2016), export sales up

### <2H FY2017 vs. 2H FY2016>

- ◆ TEPIC : Export sales for general applications up (tight Chinese environmental policies), sales for electronic materials down
- ◆ Environmental related products : Domestic sales down, export sales flat

### <2H FY2017 vs. 2H FY2017 Outlook as of Nov. 2017>

- ◆ TEPIC : Both applications above target
- ◆ Environmental related products : Both export and domestic sales below target

## FY2018 Sales Outlook

### <vs. FY2017>

- ◆ TEPIC : Export sales for general applications up (tight Chinese environmental policies), sales for electronic materials up, price increases
- ◆ Environmental related products : Domestic sales up, export sales up, price increases

Main Products		Sales YOY Change								
		FY2017 Outlook as of Nov. 2017			FY2017 Actual			FY2018 Outlook		
		1H Actual	2H	Total	1H	2H	Total	1H	2H	Total
Total Subsegment		-1%	-5%	-3%	-1%	+0%	-0%	+2%	+12%	+7%
TEPIC	◆ Epoxy compound for : (A) electronic materials (solder resist, LED materials), (B) general applications such as powder coating agent for paint ◆ World largest producer	+24%	-5%	+8%	+24%	+11%	+17%	-4%	+12%	+5%
Environmental related products	◆ HI-LITE : made from chlorinated isocyanuric acid, used for sterilizing, disinfectant for swimming pool as well as water purification tank	-6%	+5%	-1%	-6%	-3%	-4%	+8%	+8%	+8%

Two products account for 81% of total consolidated subsegment sales (FY2017)

- ◆ FY2018 Production capacity expansion of TEPIC for electronic materials (to be completed in August 2019, capex ¥0.5 billion)

# Chemicals – (E) Basic Chemicals Subsegment

## FY2017 Sales Review

### <1H FY2017 vs. 1H FY2016>

- ◆ Melamine : Domestic sales down, export sales down, temporary plant shutdown (1)
- ◆ Urea including AdBlue : Urea down, AdBlue up
- ◆ High purity sulfuric acid : Up due to demand increase by domestic semis customers

### <2H FY2017 vs. 2H FY2016>

- ◆ Melamine : Domestic sales up, export down, temporary plant shutdown (1)
- ◆ Urea including AdBlue : Urea up, AdBlue up
- ◆ High purity sulfuric acid : Up due to demand increase by domestic semis customers

### <2H FY2017 vs. 2H FY2017 Outlook as of Nov. 2017>

- ◆ Melamine : Domestic sales above target, export sales below target, temporary plant shutdown (1)
- ◆ Urea including AdBlue : Urea above target, AdBlue below target
- ◆ High purity sulfuric acid : Above target due to demand increase by domestic semis customers

## FY2018 Sales Outlook

### <vs. FY2017>

- ◆ Melamine : Domestic sales up, export sales up (tight Chinese environmental policies), price increases
- ◆ Urea including AdBlue : Urea down, AdBlue up
- ◆ High purity sulfuric acid : Up due to demand increase by domestic semis customers

Main Products		Sales YOY Change								
		FY2017 Outlook as of Nov. 2017			FY2017 Actual			FY2018 Outlook		
		1H Actual	2H	Total	1H	2H	Total	1H	2H	Total
Total Subsegment		+2%	+3%	+2%	+2%	-0%	+1%	+12%	+7%	+10%
Melamine	◆ Mainly used as adhesive agent for particle board, medium density fiberboard, plywood	-18%	+7%	-4%	-18%	-4%	-10%	+62%	+26%	+41%
Urea including AdBlue	◆ Urea: mainly used for urea formaldehyde resin, adhesive agent ◆ AdBlue: solution of urea in demineralised water for diesel trucks to reduce Nox	+1%	+5%	+3%	+1%	+4%	+2%	+5%	+6%	+5%
High purity sulfuric acid	◆ Used to clean semiconductors ◆ Largest in domestic market	+23%	+5%	+14%	+23%	+6%	+14%	-1%	+4%	+1%

Three products account for 38% of total consolidated subsegment sales (FY2017)

- ◆ From August to October 2017, melamine plant temporarily shutdown due to mechanical troubles, and normalized on October 12, 2017 (Estimated impact) (1H) OP down ¥0.37 billion, (3Q) OP down ¥0.12 billion
- ◆ In March 2018, ammonia plant temporarily shutdown due to mechanical troubles, and normalized on March 24, 2018 (Estimated impact) (4Q) OP down ¥0.27 billion

# Chemicals – (F-1) Profit Overview

(¥billion)

	FY2016 Actual					2H FY2017 Outlook as of Nov.2017			FY2017 Actual (A)							FY2018 Outlook(B)					Change (B) - (A)				
	1H	3Q	4Q	2H	Total	3Q	4Q	2H	1Q	2Q	1H	3Q	4Q	2H	Total	1Q	2Q	1H	2H	Total	1Q	2Q	1H	2H	Total
Sales	16.5	9.1	9.2	18.3	34.8	9.2	9.2	18.4	8.8	7.9	16.7	9.2	9.0	18.2	34.9	9.2	9.0	18.2	19.8	38.0	+0.4	+1.1	+1.5	+1.6	+3.1
Fine	5.3	2.7	2.7	5.4	10.7	2.6	2.5	5.1	2.8	2.5	5.3	2.8	2.5	5.3	10.6	2.7	2.7	5.4	5.9	11.3	-0.1	+0.2	+0.1	+0.6	+0.7
Basic	11.2	6.4	6.5	12.9	24.1	6.6	6.7	13.3	6.0	5.4	11.4	6.4	6.5	12.9	24.3	6.5	6.3	12.8	13.9	26.7	+0.5	+0.9	+1.4	+1.0	+2.4
OP	1.3	1.3	1.2	2.5	3.8	1.2	1.2	2.4	1.5	-0.2	1.3	1.2	0.9	2.1	3.4	1.7	-0.2	1.5	2.4	3.9	+0.2	+0.0	+0.2	+0.3	+0.5

## 3Q FY2017 Review

<vs. 3Q FY2016>

### (Fine Chemicals)

- ◆ Sales of TEPIC for both general applications and electronic materials up, price increases
- ◆ Sales of environmental related products up
- ◆ Sales up, OP up

### (Basic Chemicals)

- ◆ Sales of melamine down
- ◆ Sales of urea including AdBlue up
- ◆ Sales of high purity sulfuric acid up
- ◆ Feedstock cost up, price increases
- ◆ Plant temporary shutdown (OP down ¥0.12billion)
- ◆ Sales flat, OP down

### (Total Segment)

- ◆ Sales up ¥0.1billion, OP down ¥0.1billion

## 4Q FY2017 Review

<vs. 4Q FY2016>

### (Fine Chemicals)

- ◆ Sales of TEPIC flat, environmental related products down
- ◆ Price increases
- ◆ Sales down, OP down

### (Basic Chemicals)

- ◆ Sales of melamine up, sales of high purity sulfuric acid flat
- ◆ Sales of Urea including AdBlue flat, sales of ammonia down
- ◆ Feedstock cost up, price increases
- ◆ Plant temporary shutdown (OP down ¥0.27billion)
- ◆ Sales flat, OP down

### (Total Segment)

- ◆ Sales down ¥0.2billion, OP down ¥0.3billion

## 3Q FY2017 Review

<vs. 3Q FY2017 Outlook as of Nov. 2017>

### (Fine Chemicals)

- ◆ Sales of TEPIC for both general applications and electronic materials above target
- ◆ Sales of environmental related products below target
- ◆ Inventory adjustment cost above expectations, price increases
- ◆ Sales above target, OP in line with target

### (Basic Chemicals)

- ◆ Sales of melamine below target
- ◆ Sales of high purity sulfuric acid above target
- ◆ Sales of urea including AdBlue above target
- ◆ Plant temporary shutdown (OP below target ¥0.12billion), price increases
- ◆ Sales below target, OP in line with target

### (Total Segment)

- ◆ Sales in line with target, OP in line with target

## 4Q FY2017 Review

<vs. 4Q FY2017 Outlook as of Nov. 2017>

### (Fine Chemicals)

- ◆ Sales of TEPIC above target
- ◆ Sales of environmental related products below target, price increases
- ◆ Sales in line with target, OP below target

### (Basic Chemicals)

- ◆ Sales of melamine above target, high purity sulfuric acid below target
- ◆ Urea including AdBlue below target
- ◆ Plant temporary shutdown (OP below target ¥0.27billion), price increases
- ◆ Sales below target, OP below target

### (Total Segment)

- ◆ Sales down ¥0.2billion, OP down ¥0.3billion

# Chemicals – (F-2) Profit Overview

## 2H FY2017 Review

<vs. 2H FY2016>

### (Fine Chemicals)

- ◆ Sales of TEPIC for general applications up, for electronic materials down, price increases
- ◆ Sales of environmental related products down
- ◆ Sales down, OP down

### (Basic Chemicals)

- ◆ Sales of melamine down
- ◆ Sales of urea including AdBlue and high purity sulfuric acid up
- ◆ Feedstock cost up, fixed cost up, plant temporary shutdown (OP down ¥0.39billion), inventory adjustment cost down, price increases
- ◆ Sales flat, OP down

### (Total Segment)

- ◆ Sales down ¥0.1billion(-0%), OP down ¥0.4billion(-14%)

## 2H FY2017 Review

<vs. 2H FY2017 Outlook as of Nov. 2017>

### (Fine Chemicals)

- ◆ Sales of TEPIC above target
- ◆ Sales of environmental related products below target
- ◆ Price increases
- ◆ Sales above target, OP below target

### (Basic Chemicals)

- ◆ Sales of melamine below target,
- ◆ Sales of urea including AdBlue below target
- ◆ Sales of purity sulfuric acid above target
- ◆ Plant temporary shutdown (OP below target ¥0.39billion), price increases
- ◆ Sales below target, OP below target

### (Total Segment)

- ◆ Sales down ¥0.2billion, OP down ¥0.3billion

## FY2017 Review

<vs. FY2016>

### (Fine Chemicals)

- ◆ Sales of TEPIC up
- ◆ Sales of environmental related products down
- ◆ Inventory adjustment cost down, price increases
- ◆ Sales down, OP down

### (Basic Chemicals)

- ◆ Sales of melamine down, sales of urea including AdBlue up
- ◆ Sales of high purity sulfuric acid up
- ◆ Feedstock cost up, fixed cost up, plant temporary shutdown (OP down ¥0.76billion), inventory adjustment cost down, price increases
- ◆ Sales up, OP down

### (Total Segment)

- ◆ Sales up ¥0.1billion(+0%), OP down ¥0.4billion (including inventory adjustment cost down ¥0.7billion)(-11%)

## FY2018 Outlook

<vs. FY2017>

### (Fine Chemicals)

- ◆ Sales of TEPIC up, environmental related product up
- ◆ Feedstock cost up, price increases
- ◆ Sales up, OP up

### (Basic Chemicals)

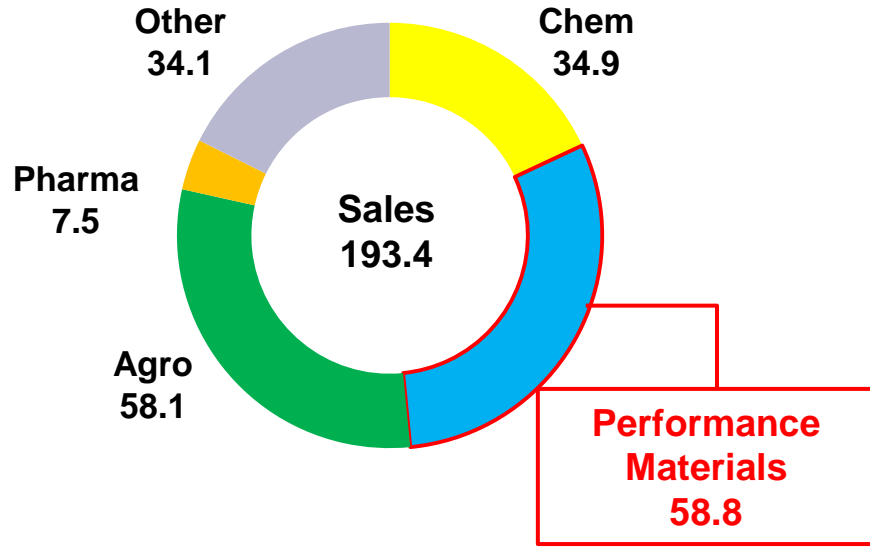
- ◆ Sales of melamine up, urea including AdBlue up,
- ◆ Sales of high purity sulfuric acid up
- ◆ Feedstock cost up, price increases
- ◆ Sales up, OP up

### (Total Segment)

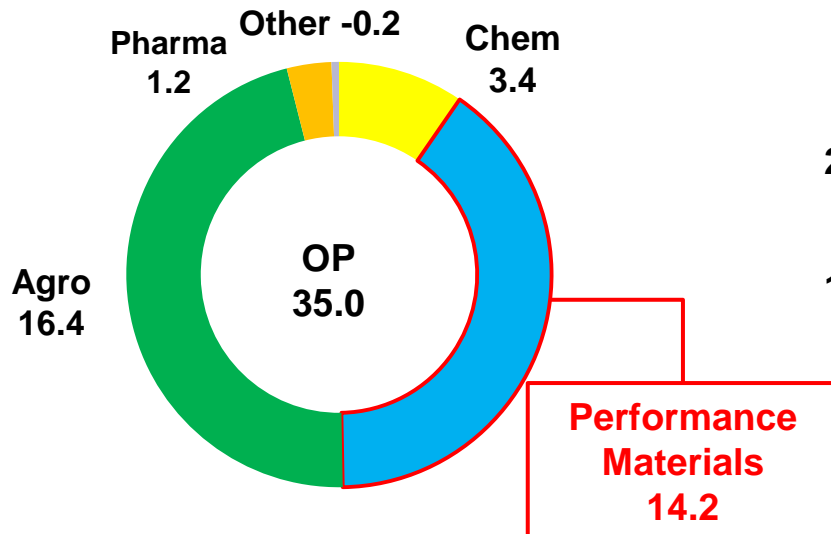
- ◆ Sales up ¥3.1billion(+9%), OP up ¥0.5 billion(+14%)

# Performance Materials – (A) Recent Financial Performance

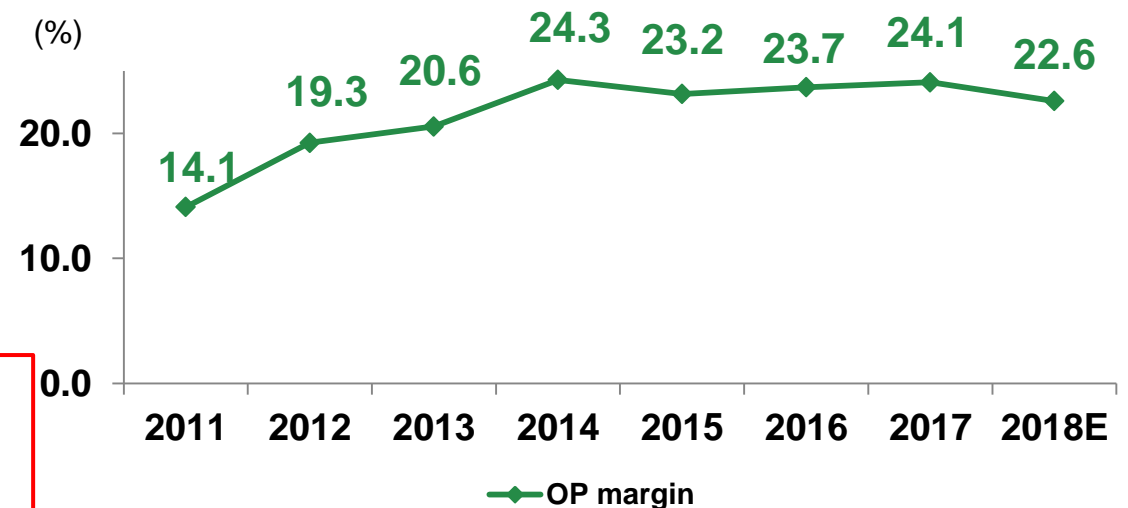
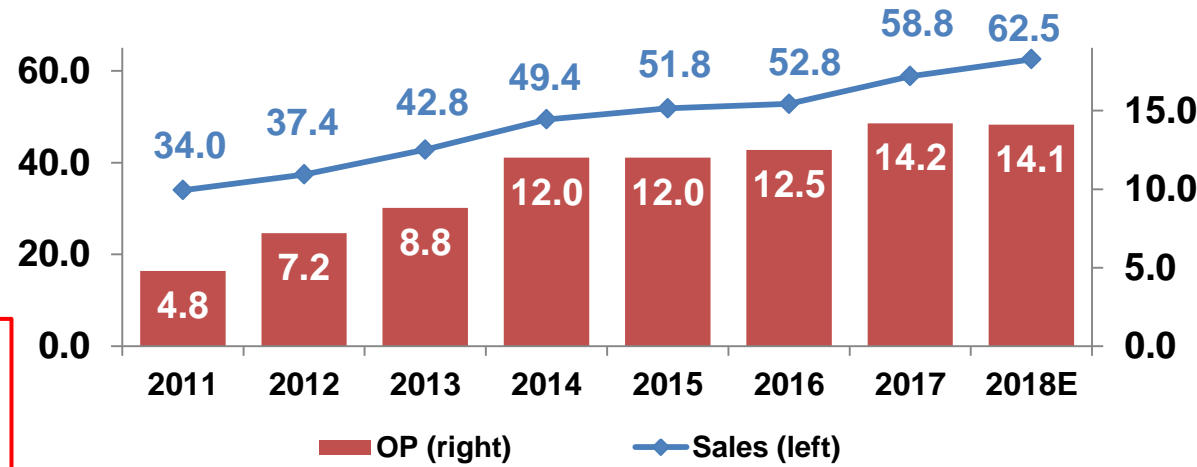
## 1. FY2017 Sales Distribution (¥billion)



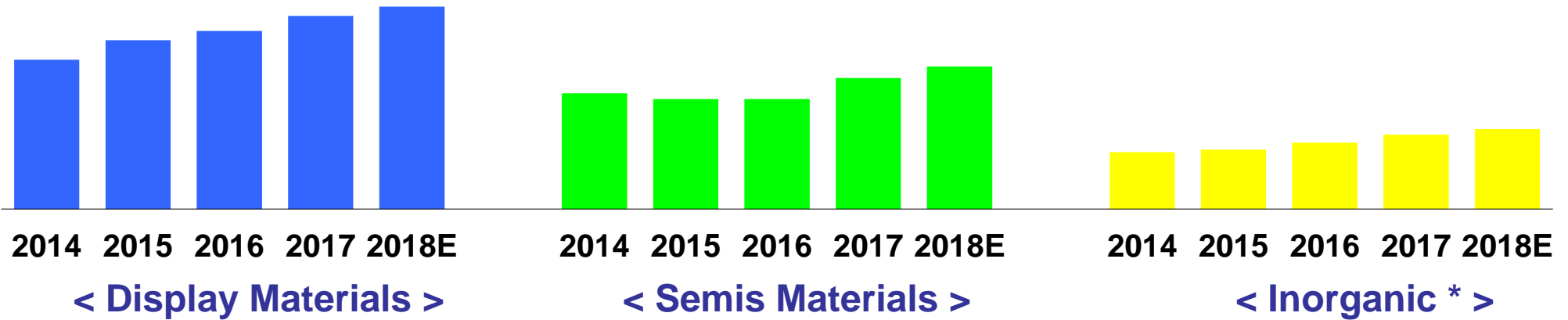
## 2. FY2017 OP Distribution (¥billion)



## 3. Recent Financial Performance (¥billion)



# Performance Materials – (B) FY2014-2018E Sales Distribution



**SUNEVER : LCD alignment coating**

**ARC® : Bottom anti-reflective coating for semis**

**Multi layer process materials (OptiStack®)**

**SNOWTEX : Silica sol for: polishing materials (silicon wafer, glass and hard disc, etc.) and non-polishing materials (NOx reduction catalyst materials, etc.)**

**Organo/Monomer sol : Hard coating materials, electronic information materials, resin additive**

**Oilfield materials : For enhancing oil recovery**

**\*2014-2015 : Non-consolidated basis**

# Performance Materials – (C-1) Display Materials

## FY2017 Sales Review

<1H FY2017 vs. 1H FY2016>

◆ Total Display Materials up 11%      IPS/FFS and VA up, TN down, Photo-alignment IPS SUNEVER up substantially

<2H FY2017 vs. 2H FY2016>

◆ Total Display Materials up 6%      IPS/FFS and VA up, TN down, Photo-alignment IPS SUNEVER up substantially

<2H FY2017 vs. 2H FY2017 Outlook as of Nov. 2017 >

◆ Total Display Materials below target      IPS/FFS below target (rubbing IPS and photo-alignment below target),  
VA below target, TN above target

## FY2018 Sales Outlook

<vs. FY2017>

◆ Total Display Materials up 5%      IPS/FFS and VA up, TN down, Photo-alignment IPS SUNEVER up substantially

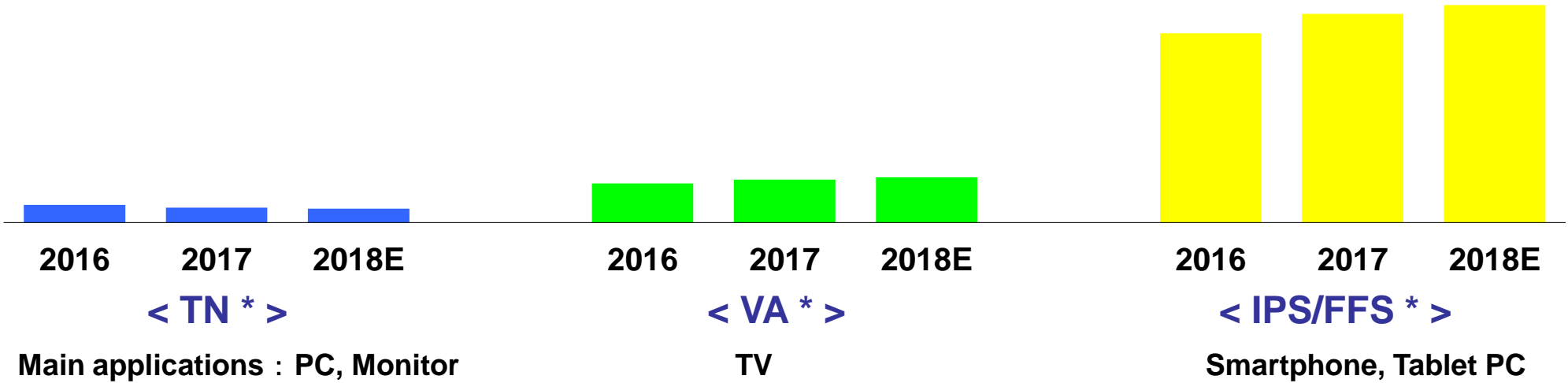
Main Products	Sales YOY Change								
	FY2017 Outlook as of Nov. 2017			FY2017 Actual			FY2018 Outlook		
	1H Actual	2H	Total	1H	2H	Total	1H	2H	Total
<b>Total SUNEVER</b>	+11%	+9%	+10%	+11%	+6%	+8%	+2%	+5%	+4%
<b>Other Display Materials (1)</b>	+21%	+8%	+14%	+21%	-2%	+9%	+9%	+99%	+53%
<b>Total Display Materials</b>	+11%	+9%	+10%	+11%	+6%	+8%	+2%	+7%	+5%

(1) Including OLED materials (Hole injection layer materials, Alignment materials for LC retarder, etc.)

- ◆ Purchased patents and expertise of OLED hole injection and hole transport materials from Solvay (September 2016)
- ◆ Established a subsidiary in Suzhou, China for product development, technical support, and customer service (July 2017)

# Performance Materials – (C-2) SUNEVER

## <SUNEVER Sales Distribution by Mode>



## <Sales YOY Change by Mode>

	FY2017 Outlook as of Nov.2017	FY2017 Actual	FY2018 Outlook
TN	↘ ↘ ↘	↘ ↘	↘
VA	↗ ↗	↗ ↗	↗
IPS/FFS	↗ ↗	↗ ↗	↗
Total	+10%	+8%	+4%

### YOY Change

+20~+29%	↗↗↗
+10~+19%	↗↗
+0~+9%	↗
-0~-9%	↘
-10~-19%	↘↘
-20~-29%	↘↘↘

\*TN : Twisted Nematic, VA : Vertical Alignment, IPS/FFS : In-Plane Switching/Fringe Field Switching



# Performance Materials – (D) Semiconductors Materials

## FY2017 Sales Review

<1H FY2017 vs. 1H FY2016>

◆ Total Semis Materials sales up 20% KrF, ArF and other semis materials up

<2H FY2017 vs. 2H FY2016>

◆ Total Semis Materials sales up 18% KrF, ArF and other semis materials up

<2H FY2017 vs. 2H FY2017 Outlook as of Nov. 2017 >

◆ Total Semis Materials above target KrF, ArF and other semis materials above target

## FY2018 Sales Outlook

<vs. FY2017>

◆ Total Semis Materials sales up 9% KrF and ArF flat, other semis materials (in addition to multi layer process materials, sales of EUV under layer, CMOS image sensor materials, and 3D packaging process materials up) up

Main Products	Sales YOY Change								
	FY2017 Outlook as of Nov. 2017			FY2017 Actual			FY2018 Outlook		
	1H Actual	2H	Total	1H	2H	Total	1H	2H	Total
KrF (ARC®)	+13%	-1%	+6%	+13%	+4%	+8%	-1%	+2%	+0%
ArF (ARC®)	+22%	+12%	+17%	+22%	+19%	+21%	+3%	-3%	+0%
<b>Total</b>	<b>+16%</b>	<b>+6%</b>	<b>+11%</b>	<b>+16%</b>	<b>+12%</b>	<b>+14%</b>	<b>+1%</b>	<b>-1%</b>	<b>+0%</b>
<b>Other Semis Materials (1)</b>	<b>+37%</b>	<b>+35%</b>	<b>+36%</b>	<b>+37%</b>	<b>+44%</b>	<b>+41%</b>	<b>+43%</b>	<b>+34%</b>	<b>+38%</b>
<b>Total Semis Materials</b>	<b>+20%</b>	<b>+11%</b>	<b>+16%</b>	<b>+20%</b>	<b>+18%</b>	<b>+19%</b>	<b>+10%</b>	<b>+7%</b>	<b>+9%</b>

(1) Multi layer process materials (OptiStack®), EUV under layer, CMOS image sensor materials, 3D packaging process materials, etc

◆ Semiconductor capex plan to capture long-term future business:

Main capex :	FY2014	Analyzing and evaluation R&D equipment (¥1.1 billion)
(approval basis)	FY2015	Product development facilities(¥2.8 billion), Analyzing and evaluation R&D equipment (¥0.8 billion), Production capacity expansion (¥0.8 billion), NCK (¥0.7 billion), Material Research Lab. (¥0.5 billion)
	FY2016	NCK production capacity expansion (¥2.6 billion), Analyzing and evaluation R&D equipment (¥1.0 billion), Material Research Lab. (¥0.4 billion)
	FY2017	Material Research Lab. (¥0.4 billion)
	FY2018	Material Research Lab. new annex (¥3.4 billion), Analyzing and evaluation R&D equipment (¥0.6 billion), ARC® Production capacity expansion (¥0.2 billion)

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# Performance Materials – (E-1) Inorganic Materials

High performance  
inorganic colloidal materials

## SNOWTEX

colloidal silica  
(water dispersed  
silica sol)

## Organo/Monomer sol

organic solvent/monomer  
dispersed silica sol

## Alumina sol

water dispersed  
alumina hydrate sol

## SUNCOLLOID

high-refractive index  
metal oxide sol

## Celnax

zinc antimonate sol

## Oilfield materials

For enhancing oil recovery

## < SNOWTEX Characteristics >

High transparency  
High hydrophilicity  
High heat resistance  
Better antistatic  
High hardness  
Control refractive index  
Increase friction  
Increase bonding  
Increase viscosity

## < SNOWTEX Key functions >

Polishing

Coating

Binding

## < Application Examples >

### •Polishing

silicon wafer,  
aluminum/glass  
hard discs

### •Coating for

special steel sheet,  
plastic optical  
lenses,  
metals, plastic films

### •Binding

catalyst carrier,  
ceramics

# Performance Materials – (E-2) SNOWTEX, Organo/Monomer sol, Oilfield Materials

## FY2017 Sales Review

### <1H FY2017 vs. 1H FY2016>

- ◆ SNOWTEX : Up (sales for polishing materials and non-polishing materials up)
- ◆ Organo/Monomer sol : Up                      ◆ Oilfield materials : Up

### <2H FY2017 vs. 2H FY2016>

- ◆ SNOWTEX : Up (sales for polishing materials and non-polishing materials up)
- ◆ Organo/Monomer sol : Down                      ◆ Oilfield materials : Up

### < 2H FY2017 vs. 2H FY2017 Outlook as of Nov. 2017>

- ◆ SNOWTEX : Above target (sales for polishing materials and non-polishing materials above target)
- ◆ Organo/Monomer sol : Below target                      ◆ Oilfield materials : Above target

## FY2018 Sales Outlook

### <vs. FY2017>

- ◆ SNOWTEX : Up (sales for polishing materials down, sales for non-polishing materials up)
- ◆ Organo/Monomer sol : Up                      ◆ Oilfield materials : Up

Main Products		Consolidated Sales YOY Change								
		FY2017 Outlook as of Nov. 2017			2017 Actual			2018 Outlook		
		1H Actual	2H	Total	1H	2H	Total	1H	2H	Total
SNOWTEX	◆ Mainly Used for : (A) polishing materials (silicon wafer, aluminum and glass hard disk), (B) non-polishing materials ( NOx reduction catalyst, automobile catalyst, special steel sheet)	+7%	-4%	+1%	+7%	+7%	+7%	+3%	+1%	+2%
Organo/ Monomer sol	◆ Used for : hard coating materials, electronic information materials, resin additive	+21%	+5%	+12%	+21%	-10%	+4%	-5%	+13%	+4%
Oilfield materials	◆ Used for : enhancing oil recovery	+513%	+75%	+159%	+513%	+80%	+164%	+54%	+64%	+60%

Three products account for 83% of total consolidated subsegment sales (FY2017)

Total Inorganic Materials	+15%	+3%	+9%	+15%	+9%	+12%	+8%	+7%	+8%
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# Performance Materials – (F-1) Profit Overview

(¥billion)

	FY2016 Actual					2H FY2017 Outlook as of Nov. 2017			FY2017 Actual (A)							FY2018 Outlook (B)					Change (B) - (A)				
	1H	3Q	4Q	2H	Total	3Q	4Q	2H	1Q	2Q	1H	3Q	4Q	2H	Total	1Q	2Q	1H	2H	Total	1Q	2Q	1H	2H	Total
Sales	25.5	13.8	13.5	27.3	52.8	14.6	14.8	29.4	14.1	15.0	29.1	15.1	14.6	29.7	58.8	15.2	15.4	30.6	31.9	62.5	+1.1	+0.4	+1.5	+2.2	+3.7
OP	6.2	3.8	2.5	6.3	12.5	3.3	2.9	6.2	3.6	4.1	7.7	4.0	2.5	6.5	14.2	3.3	3.5	6.8	7.3	14.1	-0.3	-0.6	-0.9	+0.8	-0.1

## 3Q FY2017 Review

<vs. 3Q FY2016>

- ◆ SUNEVER sales up (IPS/FFS up, VA up, TN down)
- ◆ Total Semis Materials sales up  
(KrF, ArF and other semis materials up)
- ◆ Inorganic Materials sales up  
(SNOWTEX up, Organo/Monomer sol down, Oilfield materials up)
- ◆ Fixed cost up ¥0.9 billion (including R&D)
- ◆ Sales up ¥1.3 billion, OP up ¥0.2 billion  
(OP: DP up, Semis down, Inorganic up)

## 3Q FY2017 Review

<vs. 3Q FY2017 Outlook as of Nov. 2017>

- ◆ SUNEVER sales above target  
(IPS/FFS in line with target, VA and TN above target)
- ◆ Total Semis Materials sales above target  
(KrF and ArF above target, other semis materials below target)
- ◆ Inorganic Materials sales above target  
(SNOWTEX above target, Organo/Monomer sol below target, Oilfield materials above target)
- ◆ fixed cost below expectations (¥0.3 billion) (including R&D)
- ◆ Inventory adjustment cost below expectations (¥0.2 billion)
- ◆ Sales up ¥0.5 billion, OP up ¥0.7 billion  
(OP: DP up, Semis up, Inorganic up)

## 4Q FY2017 Review

<vs. 4Q FY2016>

- ◆ SUNEVER sales up (IPS/FFS up, VA up, TN down)
- ◆ Total Semis Materials sales up  
(KrF, ArF and other semis materials up)
- ◆ Inorganic Materials sales up  
(SNOWTEX flat, Organo/Monomer sol up, Oilfield materials up)
- ◆ Fixed cost up ¥0.9 billion (including R&D)
- ◆ Sales up ¥1.1 billion, OP flat  
(OP: DP up, Semis down, Inorganic down)

## 4Q FY2017 Review

<vs. 4Q FY2017 Outlook as of Nov. 2017>

- ◆ SUNEVER sales below target  
(IPS/FFS and VA below target, TN above target)
- ◆ Total Semis Materials sales above target  
(KrF, ArF and other semis materials above target)
- ◆ Inorganic Materials sales above target  
(SNOWTEX above target, Organo/Monomer sol below target, Oilfield materials below target)
- ◆ Inventory adjustment cost above expectations (¥0.1 billion)
- ◆ Sales down ¥0.2 billion, OP down ¥0.4 billion  
(OP: DP down, Semis up, Inorganic down)

# Performance Materials – (F-2) Profit Overview

## 2H FY2017 Review

<vs. 2H FY2016>

- ◆ SUNEVER sales up (IPS/FFS and VA up, TN down)
- ◆ Total Semis Materials sales up (KrF, ArF and other materials up)
- ◆ Inorganic Materials sales up (SNOWTEX up, Organo/Monomer sol down, Oilfield materials up)
- ◆ Fixed cost up ¥1.8billion (including R&D)
- ◆ Sales up ¥2.4billion(+9%), OP up ¥0.2billion(+3%) (OP: DP up, Semis down, Inorganic down)

## 2H FY2017 Review

<vs. 2H FY2017 Outlook as of Nov. 2017>

- ◆ SUNEVER sales below target (IPS/FFS and VA below target, TN above target)
- ◆ Total Semis Materials sales above target (KrF, ArF and other materials above target)
- ◆ Inorganic Materials sales above target (SNOWTEX above target, Organo/Monomer sol below target, Oilfield materials above target)
- ◆ Fixed cost below expectations (¥0.3billion) (including R&D)
- ◆ Sales up ¥0.3billion, OP up ¥0.3billion (OP: DP down, Semis up, Inorganic down)

## FY2017 Review

<vs. FY2016>

- ◆ SUNEVER sales up (IPS/FFS and VA up, TN down)
- ◆ Total Semis Materials sales up (KrF, ArF and other materials up)
- ◆ Inorganic Materials sales up (SNOWTEX up, Organo/Monomer sol up, Oilfield materials up)
- ◆ Fixed cost up ¥3.1billion (including R&D)
- ◆ Sales up ¥6.0billion(+11%), OP up ¥1.7billion(+13%) (OP: DP up, Semis down, Inorganic up)

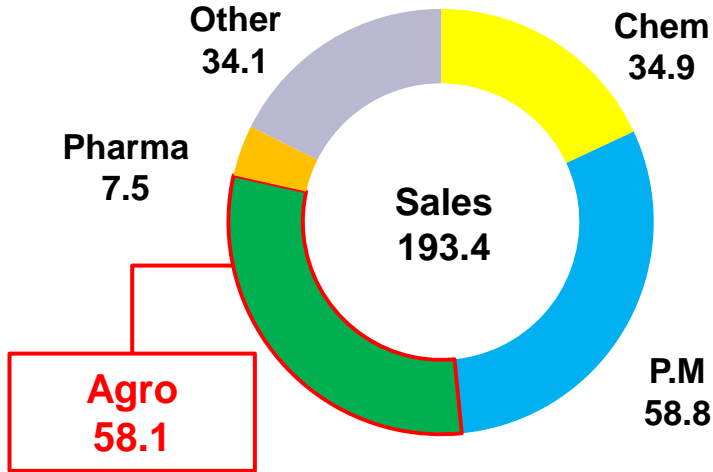
## FY2018 Outlook

<vs. FY2017>

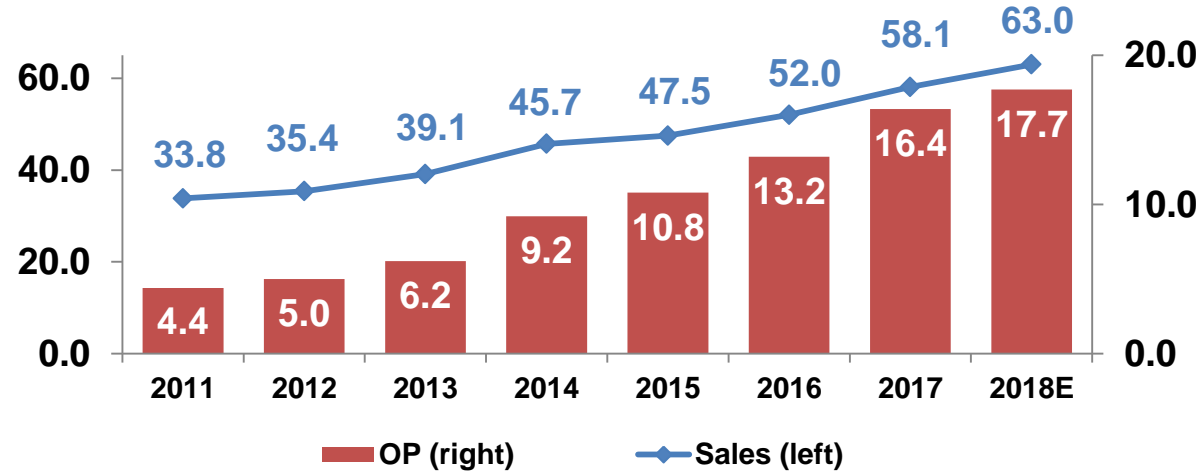
- ◆ SUNEVER sales up (IPS/FFS and VA up, TN down)
- ◆ Total Semis Materials sales up (KrF and ArF flat, other materials up)
- ◆ Inorganic Materials sales up (SNOWTEX, Organo/Monomer sol, and Oilfield materials up)
- ◆ Fixed cost up ¥2.2billion (including R&D)
- ◆ Inventory adjustment cost up ¥0.4billion
- ◆ Sales up ¥3.7billion(+6%), OP down ¥0.1billion(-1%) (OP: DP up, Semis up, Inorganic down)

# Agrochemicals – (A) Recent Financial Performance

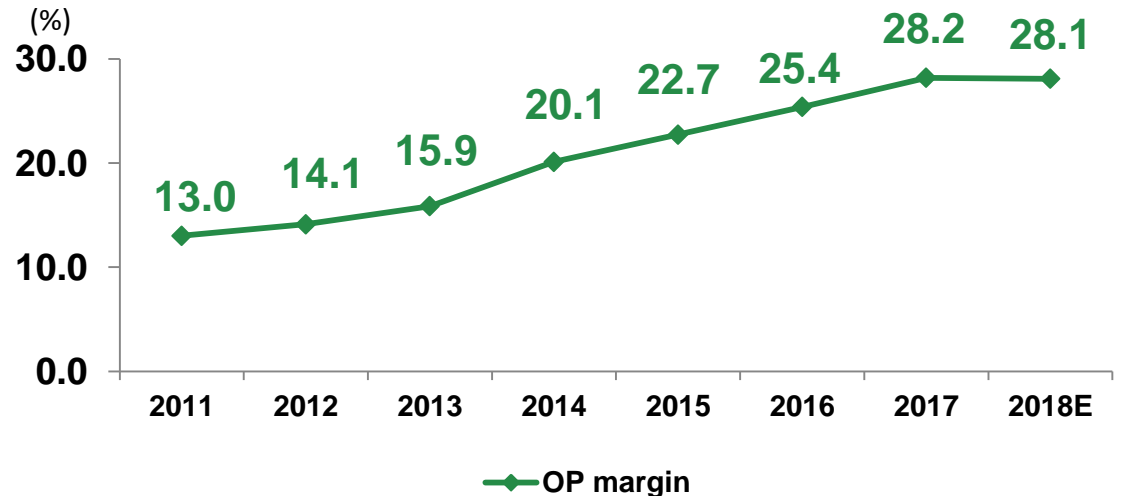
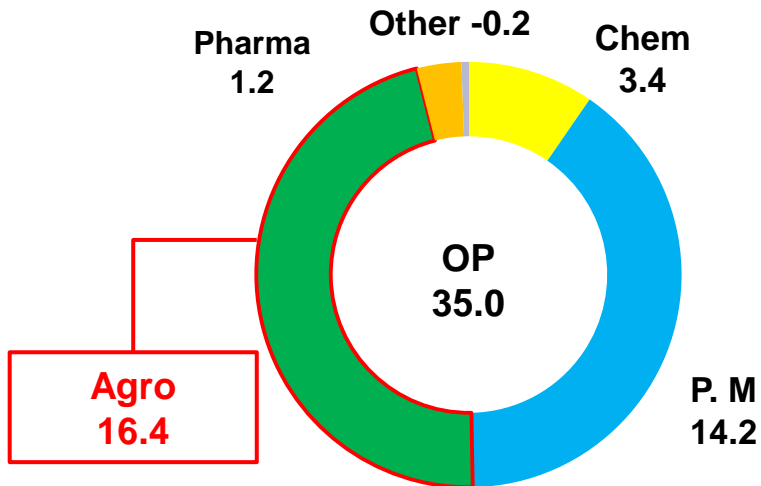
## 1. FY2017 Sales Distribution (¥billion)



## 3. Recent Financial Performance (¥billion)



## 2. FY2017 OP Distribution (¥billion)



# Agrochemicals – (B) Sales YOY Change (Before Discount)

Main Products (in order of FY2017 sales amount)		Sales YOY Change			
		FY2016 /FY2015 (1)	FY2017E as of Nov. 2017 /FY2016 (2)	FY2017 /FY2016 (2)	FY2018E /FY2017 (2)
ROUNDUP	herbicide	↗↗	↗	↗	↗
Fluralaner	Animal health products	↗↗↗↗↗	↗↗↗↗↗	↗↗↗↗↗	↗↗↗
ALTAIR (NC-620)	herbicide	↗↗↗	↘	↗	↗
TARGA	herbicide	↗	↗	↗	↗
PERMIT	herbicide	↘↘↘	↗↗	↗	↗↗
LEIMAY/ORACLE	fungicide	↗↗	↗↗↗	↗↗	↘↘
SIRIUS	herbicide	↘↘	↘	↘	↗
PULSOR (THIFLUZAMIDE)	fungicide	↘↘↘↘	↗	↘	↗↗↗↗
STARMITE	miticide	↘↘	↘	↘↘	↘↘
SANMITE	insecticide	↘↘	↗↗↗↗↗	↗↗↗↗↗	↘

Domestic shipment and pricing policies changes expected in 2H FY2017 were cancelled. These policies were expected to result in one-time sales shift of ¥1.4billion from 2H FY2017 to FY2018 (see p34 in Presentation Materials for FY2016)

YOY Change	
+40~+59%	↗↗↗↗
+30~+39%	↗↗↗
+20~+29%	↗↗↗
+10~+19%	↗↗
+0~+9%	↗
-0~-9%	↘
-10~-19%	↘↘
-20~-29%	↘↘↘
-30~-39%	↘↘↘↘

- (1) Non-consolidated basis
- (2) Consolidated basis



# Agrochemicals – (C) Main Products

Launch	Products	Application	Product development type	Notes
2002	ROUNDUP	Herbicide	Acquired	Acquired domestic business from Monsanto, continuing to grow
2008	LEIMAY	Fungicide	In-house	
2008	STARMITE	Insecticide	In-house	
2009	PULSOR (THIFLUZAMIDE)	Fungicide	Acquired	Acquired world business from Dow
2009	PREVATHON	Insecticide	Licensed-in	Licensed from DuPont
2010	ROUNDUP AL	Herbicide	In-house	For general household shower-type herbicide market, launched ROUNDUP ALII in FY2016 and ALIII in FY2017, growing sharply
2011	ALTAIR (NC-620)	Herbicide	In-house	Launched in Korea in FY2011 and in Japan in FY2012
2013	Fluralaner	Animal health products	In-house	Started to be supplied to MSD* in July as scheduled
2014	BRAVECTO**	Veterinary medical product for companion animals	-	Launched in several countries in EU in April, and in the USA in June by MSD
2014	EXIREL / PRYROSSO	Insecticide	Licensed-in	Licensed from DuPont
2015	BRAVECTO**	Veterinary medical product for companion animals	-	Launched in Japan in July by Intervet K.K Intervet K.K :a Japanese subsidiary of MSD
2015	TREFANOCIDE	Herbicide	Licensed-in	Acquired by Gowan from Dow, exclusive sales right in Japan transferred to NCI
2017	NEXTER	Fungicide	Licensed-in	Licensed from Syngenta
2017	TRANSFORM™ / EXCEED™	Insecticide	Licensed-in	Licensed from Dow
2017	EXZOLT**	Veterinary medical product for poultry	-	Launched in EU in September for poultry red mites by MSD
2018	GRACIA	Insecticide	In-house	Effective against a wide range of serious pests, having less negative impact on honeybees. Expected to be launched in Korea in FY2018
2022	NC-241(PYRAPROPOYNE)	Fungicide	In-house	General fungicide
2024	NC-653(new addition)	Herbicide	In-house	Effective against resistant weeds, having excellent safety to rice

\*MSD: MSD Animal Health, the global animal health business unit of Merck

\*\*BRAVECTO, EXZOLT: the product names developed by MSD, containing the active substance Fluralaner

- ◆ Expanded Fluralaner production capacity at two outsourced factories (March 2017)
- ◆ Full reconstruction of Biological Research Laboratories for Agro and Pharma completed (April 2017) (FY2010-2017 total capex ¥6.4 billion)
- ◆ Construction of GRACIA plant started in May 2017 (to be completed in July 2018, capex ¥1.4billion)
- ◆ Construction of R&D facilities specializing in formulation started in 2018 (to be completed in September 2019, capex ¥0.6billion)
- ◆ Acquired 3% share of IHARABRÁS (leading agro company in Brazil) in September 2011
- ◆ Established subsidiaries in China (January 2014), Brazil (August 2016) and India (July 2017) for sales support and product development
- ◆ Export sales account for 38% of FY2017 consolidated segment sales (Asia:19%, Europe/Africa:72%, North/Central/South America:9%)

\*Including Fluralaner

# Agrochemicals – (D) Fluralaner

## ◆ Fluralaner

\*Invented by NCI and supplied to MSD as the active pharmaceutical ingredient of BRAVECTO

## ◆ BRAVECTO

\*Developed by MSD

\*Veterinary medical product providing unique immediate and persistent tick and flea killing activity for dogs for 12 weeks, longer than currently available once-monthly commercialized products

\*Chewable tablet for dogs launched by MSD

April 2014 Germany, Spain, Italy, France, the Netherlands, UK

June 2014 USA, July 2015 Japan

Currently, available in more than 85 countries

\*Spot-on solution for dogs and cats launched by MSD

July 2016 EU(cats), December 2016 USA(cats)

January 2017 USA, Germany, Austria(dogs)

## ◆ EXZOLT

\*For poultry red mites launched by MSD

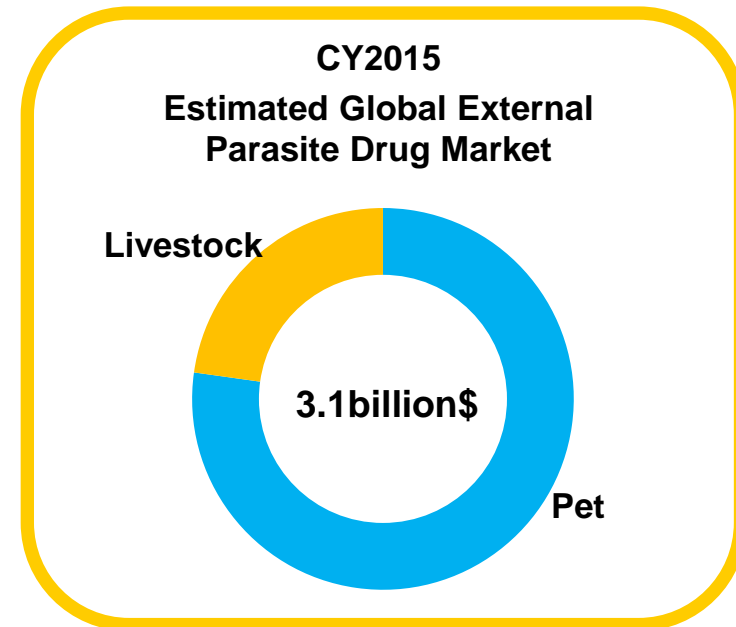
(administered via drinking water)

September 2017 EU

## ◆ BRAVECTO Plus

\*A broad-spectrum combination spot-on solution for cats to treat internal and external parasite infestations

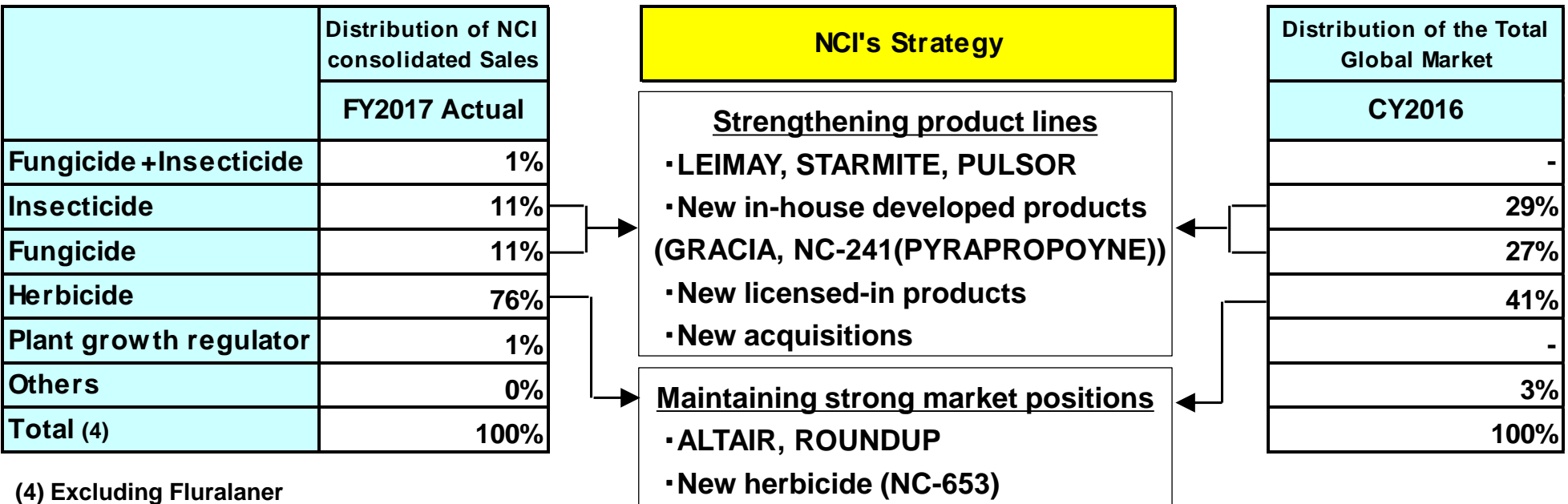
March 2018 MSD receives positive opinion from European Medicines Agency



# Agrochemicals – (E) Segment Sales (Before Discount)

	Sales YOY Change (3)												
	FY2013 Actual	FY2014 Actual	FY2015 Actual	FY2016 Actual	FY2017 Outlook as of Nov. 2017			FY2017 Actual			FY2018 Outlook		
	Total	Total	Total	Total	1H Actual	2H	Total	1H	2H	Total	1H	2H	Total
<b>ROUNDUP</b>	-0%	+17%	-0%	+13%	+8%	-6%	+1%	+8%	+8%	+8%	+3%	+1%	+2%
(ROUNDUP AL(1))	(+66%)	(+59%)	(+36%)	(+30%)	(+23%)	(+7%)	(+18%)	(+23%)	(+18%)	(+21%)	(+26%)	(+12%)	(+22%)
<b>Others(2)</b>	+14%	+13%	+5%	+9%	+9%	+16%	+13%	+9%	+12%	+11%	+11%	+8%	+9%
<b>Total Segment</b>	+11%	+14%	+4%	+10%	+9%	+11%	+10%	+9%	+11%	+10%	+9%	+6%	+8%

- (1) ROUNDUP for general household, launched in FY2010, accounting for 17% of FY2017 ROUNDUP sales
- (2) Including Fluralaner
- (3) FY2013-2016 Actual : Non-consolidated basis, FY2017-2018 Outlook: Consolidated basis



(4) Excluding Fluralaner

(Blank)

# Agrochemicals – (F-1) Profit Overview

(¥billion)

	2016 Actual					2H FY2017E as of Nov.2017			2017 Actual (A)							2018 Outlook (B)					Change (B) - (A)				
	1H	3Q	4Q	2H	Total	3Q	4Q	2H	1Q	2Q	1H	3Q	4Q	2H	Total	1Q	2Q	1H	2H	Total	1Q	2Q	1H	2H	Total
Sales	24.0	4.2	23.8	28.0	52.0	7.0	25.1	32.1	14.6	11.5	26.1	6.4	25.6	32.0	58.1	17.3	11.6	28.9	34.1	63.0	+2.7	+0.1	+2.8	+2.1	+4.9
OP	6.9	-2.0	8.3	6.3	13.2	-0.8	8.3	7.5	4.5	3.6	8.1	-0.6	8.9	8.3	16.4	5.6	4.4	10.0	7.7	17.7	+1.1	+0.8	+1.9	-0.6	+1.3

## 3Q FY2017 Review

<vs. 3Q FY2016>

- ◆ Sales up : PERMIT(export), TARGA(export), PULSOR(export), LEIMAY(export), Fluralaner
- ◆ Sales down : ROUNDUP, SIRIUS, ALTAIR
- ◆ Sales up ¥2.2 billion, OP up ¥1.4 billion

## 3Q FY2017 Review

<vs. 3Q FY2017 Outlook as of Nov. 2017>

- ◆ Sales above target : PERMIT, TARGA, Fluralaner
- ◆ Sales below target : ROUNDUP, ALTAIR, SANMITE, LEIMAY
- ◆ Inventory adjustment cost below expectations (¥0.3 billion)
- ◆ Sales down ¥0.6 billion, OP up ¥0.2 billion

## 4Q FY2017 Review

<vs. 4Q FY2016>

- ◆ Sales up : ROUNDUP, SIRIUS, ALTAIR(domestic), SANMITE(export), Fluralaner
- ◆ Sales down : PERMIT(export), STARMITE(domestic, export)
- ◆ Fixed cost up ¥0.3billion
- ◆ Inventory adjustment cost up ¥0.2billion
- ◆ Sales up ¥1.8billion, OP up ¥0.6billion

## 4Q FY2017 Review

<vs. 4Q FY2017 Outlook as of Nov. 2017>

- ◆ Sales above target : ROUNDUP, ALTAIR(domestic, export), LEIMAY(export)
- ◆ Sales below target : PERMIT(export), STARMITE(export), PULSOR(export), Fluralaner(some shipments shifted to FY2018)
- ◆ Fixed cost up ¥0.2billion
- ◆ Inventory adjustment cost below expectations (¥0.3 billion)
- ◆ Sales up ¥0.5 billion, OP up ¥0.6 billion

# Agrochemicals – (F-2) Profit Overview

## 2H FY2017 Review

<vs. 2H FY2016>

- ◆ Sales up : ROUNDUP, PERMIT(export), PULSOR(export), TARGA(export), LEIMAY(export), Fluralaner
- ◆ Sales down : ALTAIR(export), SIRIUS(domestic), STARMITE(domestic, export)
- ◆ Fixed cost up ¥0.8billion
- ◆ Inventory adjustment cost down ¥0.2billion
- ◆ Sales up ¥4.0 billion(+14%), OP up ¥2.0 billion(+30%)

## 2H FY2017 Review

<vs. 2H FY2017 Outlook as of Nov. 2017>

- ◆ Sales above target : ROUNDUP, ALTAIR
- ◆ Sales below target : Fluralaner(some shipments shifted to FY2018), PERMIT(export), PULSOR(export), STARMITE(export),
- ◆ Absence of domestic shipment and pricing policies changes(p48)
- ◆ Fixed cost above expectations (¥0.2 billion)
- ◆ Inventory adjustment cost below expectations (¥0.6 billion)
- ◆ Sales down ¥0.1 billion, OP up ¥0.8 billion

## FY2017 Review

<vs. FY2016>

- ◆ Sales up : ROUNDUP, ALTAIR(domestic), PERMIT(export), LEIMAY(export), TARGA(export), SANMITE, Fluralaner
- ◆ Sales down : STARMITE(domestic), SIRIUS
- ◆ Fixed cost up ¥1.1billion
- ◆ Inventory adjustment cost down ¥0.1billion
- ◆ Sales up ¥6.1billion(+12%), OP up ¥3.2billion(+24%)

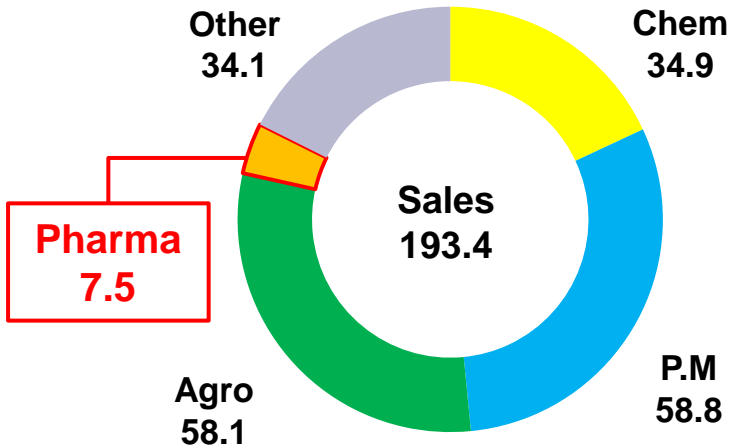
## FY2018 Outlook

<vs. FY2017>

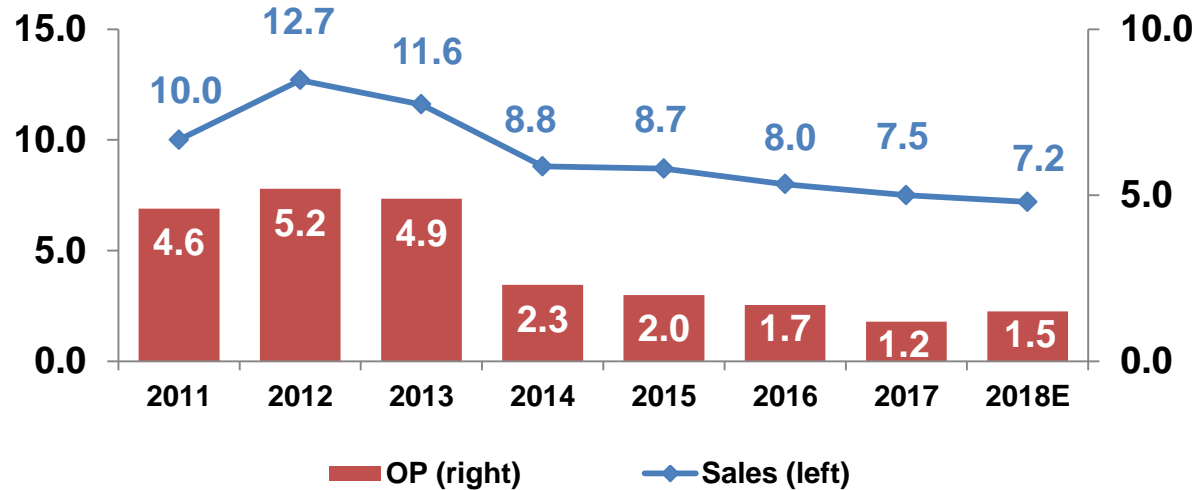
- ◆ Sales up : ROUNDUP, PERMIT(export), TARGA(export), PULSOR(export), GRACIA(export), Fluralaner, TRANSFORM™/EXCEED™
- ◆ Sales down : STARMITE(domestic), LEIMAY(export)
- ◆ Fixed cost up ¥1.4billion
- ◆ Inventory adjustment cost down ¥0.1billion
- ◆ Sales up ¥4.9billion(+8%), OP up ¥1.3billion(+8%)

# Pharmaceuticals – (A) Recent Financial Performance

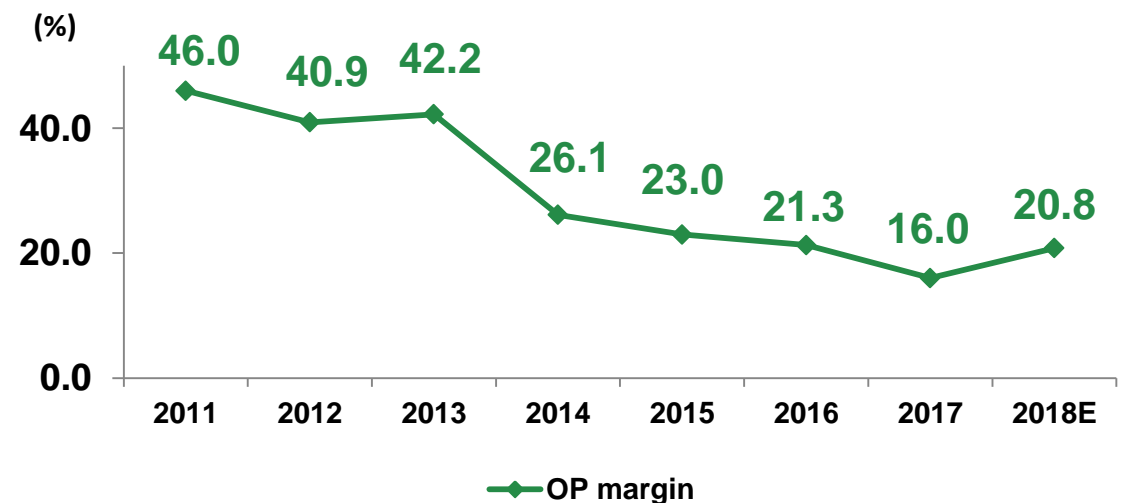
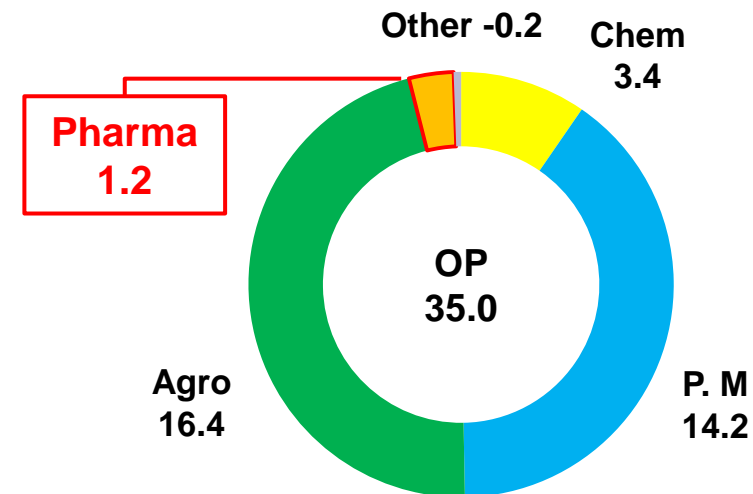
## 1. FY2017 Sales Distribution (¥billion)



## 3. Recent Financial Performance (¥billion)



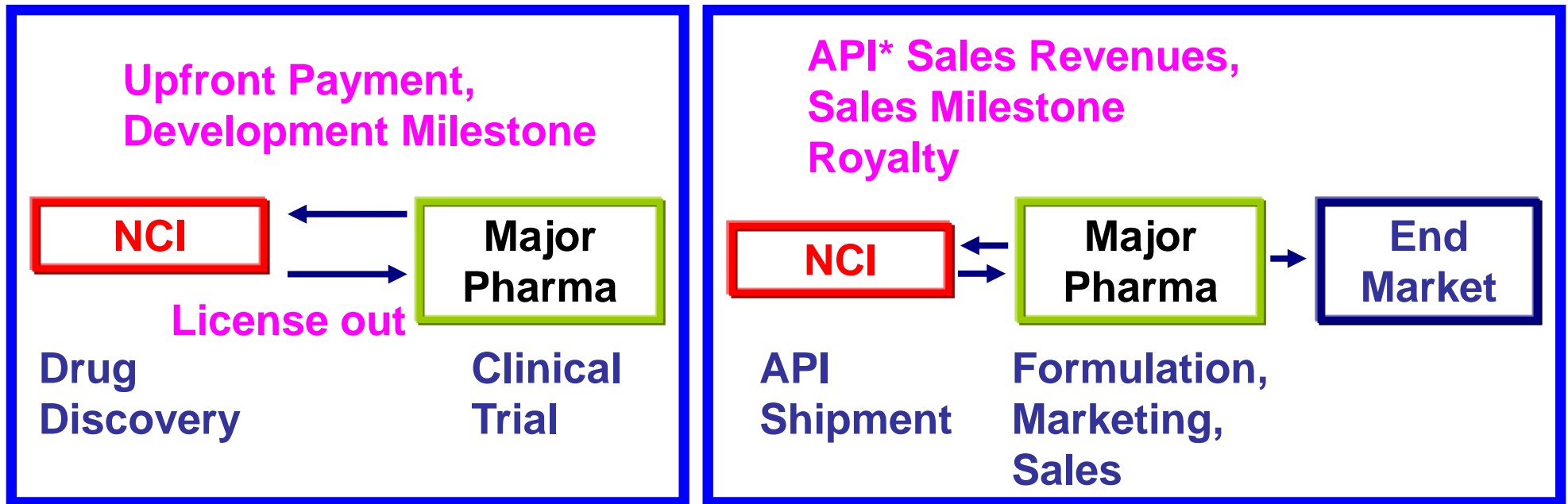
## 2. FY2017 OP Distribution (¥billion)



# Pharmaceuticals – (B) NCI Business Model (New Drug)

- ◆ Unique ethical pharma business model without sales force

< Before Launch > → < After Launch >



API\*: Active Pharmaceutical Ingredient



## Pharmaceuticals – (C) LIVALO (Anti-Cholesterol Drug)

	FY2013 Actual	FY2014 Actual	FY2015 Actual	FY2016 Actual	FY2017 Outlook as of Nov. 2017	FY2017 Actual	FY2018 Outlook
Domestic End Market Sales (NHI drug price basis, ¥billion)	52.6	34.5	29.7	23.9	-	21.0	-
Our Domestic and Export API Sales (¥billion)	10.2	6.9	5.8	5.2	4.6	4.8	4.4
Our Domestic and Export API Sales YOY Change (Our Domestic API Sales YOY Change)	-2% (-2%)	-32% (-46%)	-15% (-27%)	-11% (-42%)	-12% (-70%)	-7% (-73%)	-8% (+4%)

- ◆ August 2013, domestic compound patent expired
- ◆ April 2014, filed complaints against certain companies in USA which had submitted Abbreviated New Drug Application(ANDA) with FDA
- ◆ FY2018 NHI drug price cut about -11%
- ◆ Full reconstruction of Biological Research Laboratories completed (April 2017)
- ◆ Currently, available in 25 countries

# Pharmaceuticals – (D) Pipeline

Product	Mechanism of action	Expected indications	Development partners
NIP-022	<ul style="list-style-type: none"> <li>Thrombopoietin (TPO) receptor activation</li> </ul>	<ul style="list-style-type: none"> <li>Thrombocytopenia</li> </ul>	<ul style="list-style-type: none"> <li>Terminated the license agreement with Ono in April 2014</li> <li>Entered into the license agreement with Yakult in October 2015</li> <li>Completed a Phase I clinical trial in Japan in July 2017</li> </ul>
NTC-801	<ul style="list-style-type: none"> <li>Acetylcholine-activated K<sup>+</sup> channel current (IKACH) inhibition</li> </ul>	<ul style="list-style-type: none"> <li>Arrhythmia (Atrial fibrillation)</li> </ul>	<ul style="list-style-type: none"> <li>Terminated the license agreement with Teijin and BMS in September 2015</li> <li>Under consideration regarding seeking new partners</li> </ul>

## ◆ Strategic research collaboration

- With Shionogi for discovering novel antifungal drug candidates (Started in January 2016)
- With Mitsubishi Tanabe Pharma to create novel drug candidates for autoimmune diseases (Started in March 2017, terminated in April 2018)
- With Shionogi for discovering novel analgesic drug candidates (Started in April 2017)

## ◆ Novel drug discovery research

To create innovative medicines by using the strategic chemical library, the precise organic synthesis technology and the state-of-the-art evaluation technology;

- In-house research : Focusing on cardiovascular disease and neurological disease as core therapeutic areas.
- Collaborative research : Utilizing open innovation effectively (e.g. Shionogi)

# Pharmaceuticals – (E) Custom Chemicals

- ◆ Custom manufacturing and process researching services for pharmaceutical ingredients and intermediates from pre-clinical to commercial production stages
- ◆ October 2013, Custom Chemicals shifted from Chemicals Segment to Pharma Segment to seek synergy of the two divisions (organic synthesis technology, R&D/manufacturing/quality control systems)
- ◆ Focusing on obtaining new contracts including high activity and high-valued added GE API products (Prostaglandin and vitamin D3, etc.)

## FY2017 Sales Review

<1H FY2017 vs. 1H FY2016>

- ◆ Up due to volume increase

< 2H FY2017 vs. 1H FY2016>

- ◆ Up due to volume increase

< 2H FY2017 vs. 2H FY2017 Outlook as of Nov. 2017>

- ◆ Below target (some shipments shifted to FY2018)

## FY2018 Sales Outlook

<vs. FY2017>

- ◆ Up due to volume increase

Sales YOY Change											
FY2016 Actual			FY2017 Outlook as of Nov. 2017			FY2017 Actual			FY2018 Outlook		
1H	2H	Total	1H Actual	2H	Total	1H	2H	Total	1H	2H	Total
+10%	+2%	+6%	+9%	+11%	+10%	+9%	+5%	+6%	+25%	-15%	+3%

# Pharmaceuticals – (F) Equity participation in PeptiStar Inc. (PS)

- ◆ **Our Investment Amount:** ¥0.9 billion, (8.2% of the number of shares outstanding after the third-party allotment)
- ◆ **Outline of PS:**

The world's first Contract Manufacturing Organization (CMO) for the research and commercial manufacture of constrained peptide therapeutics.  
Established by PeptiDream, Shionogi and Sekisui Chemical in September 2017
- ◆ **Funding of PS :**  
(approximate amount)
  - ¥11.0 billion Equity provided by about 20 companies by way of third-party allotment
  - ¥9.0 billion Grant program of Cyclic Innovation for Clinical Empowerment (CiCLE) by the Japan Agency for Medical Research and Development (AMED)Total ¥20.0 billion
- ◆ **Business Plan of PS :** Expected to start commercial production constrained peptide therapeutics in fall 2019
- ◆ **Our Role and Objective:** Develop solution-phase synthesis suitable for mass production of constrained peptides
- ◆ **Impact on our Business:** Improve our novel synthetic method (solution-phase synthesis) of constrained peptides, reduce manufacturing cost substantially and expand our CMO business.

# Pharmaceuticals – (G-1) Profit Overview

(¥billion)

	FY2016 Actual					2H FY2017E as of Nov.2017			FY2017 Actual (A)							FY2018 Outlook (B)					Change (B) - (A)				
	1H	3Q	4Q	2H	Total	3Q	4Q	2H	1Q	2Q	1H	3Q	4Q	2H	Total	1Q	2Q	1H	2H	Total	1Q	2Q	1H	2H	Total
Sales	3.7	2.4	1.9	4.3	8.0	2.3	1.5	3.8	2.1	1.4	3.5	2.3	1.7	4.0	7.5	1.9	1.9	3.8	3.4	7.2	-0.2	+0.5	+0.3	-0.6	-0.3
OP	0.6	0.8	0.3	1.1	1.7	0.5	0.0	0.5	0.5	0.0	0.5	0.6	0.1	0.7	1.2	0.3	0.3	0.6	0.9	1.5	-0.2	+0.3	+0.1	+0.2	+0.3

## 3Q FY2017 Review

<vs. 3Q FY2016>

- ◆ LIVALO sales down  
(domestic sales down due to GE, export up)
- ◆ Custom Chemicals sales up
- ◆ Inventory adjustment cost up ¥0.2 billion
- ◆ Sales down ¥0.1 billion, OP down ¥0.2 billion

## 3Q FY2017 Review

<vs. 3Q FY2017 Outlook as of Nov. 2017>

- ◆ LIVALO sales above target  
(domestic sales in line with target, export above target)
- ◆ Custom Chemicals sales below target
- ◆ Sales in line with target, OP up ¥0.1 billion

## 4Q FY2017 Review

<vs. 4Q FY2016>

- ◆ LIVALO sales up (domestic sales down, export up)
- ◆ Custom Chemicals sales down
- ◆ Absence of up-front payment (received in 4Q FY2016)
- ◆ Fixed cost down ¥0.2billion
- ◆ Sales down ¥0.2billion, OP down ¥0.2billion

## 4Q FY2017 Review

<vs. 4Q FY2017 Outlook as of Nov. 2017>

- ◆ LIVALO sales above target  
(domestic sales below target, export above target)
- ◆ Custom Chemicals sales below target
- ◆ Sales up ¥0.2 billion, OP up ¥0.1 billion

# Pharmaceuticals – (G-2) Profit Overview

## 2H FY2017 Review

<vs. 2H FY2016>

- ◆ LIVALO sales down  
(domestic sales down due to GE, export up)
- ◆ Custom Chemicals sales down
- ◆ Absence of up-front payment (received in 2H FY2016)
- ◆ Fixed cost down ¥0.3 billion
- ◆ Inventory adjustment cost up ¥0.2 billion
- ◆ Sales down ¥0.3 billion(-7%), OP down ¥0.4 billion(-30%)

## FY2017 Review

<vs. FY2016>

- ◆ LIVALO sales down (domestic sales down, export up)
- ◆ Custom Chemicals sales up
- ◆ Absence of up-front payment (received in 2H FY2016)
- ◆ Fixed cost down ¥0.4billion
- ◆ Inventory adjustment cost up ¥0.2 billion
- ◆ Sales down ¥0.5billion(-6%), OP down ¥0.5billion(-26%)

## 2H FY2017 Review

<vs. 2H FY2017 Outlook as of Nov. 2017>

- ◆ LIVALO sales above target  
(domestic sales below target, export above target)
- ◆ Custom Chemicals sales below target
- ◆ Fixed cost below ¥0.1 billion
- ◆ Sales up ¥0.2billion, OP up ¥0.2 billion

## FY2018 Outlook

<vs. FY2017>

- ◆ LIVALO sales down (domestic sales flat, export down)
- ◆ Custom Chemicals sales up
- ◆ Small amount of up-front payment expected
- ◆ Fixed cost down ¥0.1billion
- ◆ Inventory adjustment cost down ¥0.2 billion
- ◆ Sales down ¥0.3billion(-4%), OP up ¥0.3billion(+22%)

# Mid-Term Business Plan Vista 2021 (FY2016-2021) announced in May 2016 -Financial Indicators (A)

(¥billion)

1.PL	Actual				Outlook as of May 2018				Plan (announced in May 2016)					
	2016		2017		2018		2016		2018		2021			
Sales	180.3		193.4		204.0		187.5		217.0		250.0			
Operating Profit	31.4		35.0		36.8		29.7		35.0		40.0			
Ordinary Income	31.7		36.2		38.0		30.4		35.6		40.8			
Net Income	24.0		27.1		28.5		23.0		27.1		31.0			
OP Margin	17.4%		18.1%		18.0%		15.8%		16.1%		16.0%			
ROE	15.1%		16.1%		15.8%		14.3%		above 14%		above 14%			
Dividend Payout Ratio	33.1%		37.7%		40.6%		33.3%		40%		40%			
Total Payout Ratio	70.4%		70.7%		58.0%		maintain 70%		maintain 70%		maintain 70%			
FX Rate (¥/\$)	1H 105	2H 112	1H 111	2H 111	1H 107	2H 107	FY2016 onward 115							
Naphtha (¥/KL)	1H 31,400	2H 38,200	1H 37,700	2H 46,200	48,500		35,400		FY2017 onward 51,100					

(¥billion)

2.Segment (1)	Actual				Outlook as of May 2018		Plan (announced in May 2016)					
	Sales		OP		Sales	OP	Sales			OP		
	2016	2017	2016	2017	2018	2018	2016	2018	2021	2016	2018	2021
Chem	34.8	34.9	3.8	3.4	38.0	3.9	35.4	38.0	40.5	4.9	4.0	4.5
Performance M.	52.8	58.8	12.5	14.2	62.5	14.1	55.3	68.0	82.9	11.7	15.4	18.4
Agro	52.0	58.1	13.2	16.4	63.0	17.7	52.1	58.6	67.0	11.3	12.9	16.7
Pharma	8.0	7.5	1.7	1.2	7.2	1.5	7.4	8.1	8.3	1.4	2.0	2.4
Trading, Others, Adj	32.7	34.1	0.2	-0.2	33.3	-0.4	37.3	44.3	51.3	0.4	0.7	-2.0
<b>Total</b>	<b>180.3</b>	<b>193.4</b>	<b>31.4</b>	<b>35.0</b>	<b>204.0</b>	<b>36.8</b>	<b>187.5</b>	<b>217.0</b>	<b>250.0</b>	<b>29.7</b>	<b>35.0</b>	<b>40.0</b>

(1) Including inter-segment sales/transfers

# Mid-Term Business Plan Vista 2021 (FY2016-2021) <sup>(1)</sup> announced in May 2016 -Financial Indicators (B)

- ◆ **OP Margin : Maintain above 15% (FY2017 Actual 18.1%)**
- ◆ **ROE : Maintain above 14% (FY2017 Actual 16.1%)**
- ◆ **Dividend Payout Ratio :  
Gradually increase to 40% in FY2018 (FY2017 Actual 37.7%)**
- ◆ **Total Payout Ratio :  
Maintain 70% (FY2017 Actual 70.7%) New indicator**
- ◆ **R&D expenses/sales : above 8% (FY2017 Actual 8.9%)**



# FY2018 Outlook vs. FY2018 Mid-term Plan

(¥billion)

		FY2018 Outlook (A)	FY2018 Mid-term Plan (B)	(A) - (B)	
Chemicals	Sales	38.0	38.0	+0.0	<ul style="list-style-type: none"> <li>◆ Above target: melamine(export), high purity sulfuric acid, TEPIC(general applications, electronic materials)</li> <li>◆ Below target: melamine(domestic), urea including AdBlue, high purity ammonia, TEPIC(new grades)</li> </ul>
	OP	3.9	4.0	-0.1	<ul style="list-style-type: none"> <li>◆ Sales in line with target, utility and raw material costs above expectations, price increases above target, fixed cost in line with expectations</li> <li>◆ Fine Chemicals OP below target, Basic Chemicals OP above target</li> </ul>
Performance Materials	Sales	62.5	68.0	-5.5	<ul style="list-style-type: none"> <li>◆ Above target: KrF, EUV under layer materials, 3D packaging process materials, SNOWTEX (polishing), Organo/Monomer sol</li> <li>◆ Below target: DP(all SUNEVER modes, HYPERTECH), Semis (ArF, multi layer process materials, CMOS image sensor materials, new litho materials), OLED materials</li> <li>◆ In line with target: Inorganic (but, Oilfield materials below target)</li> </ul>
	OP	14.1	15.4	-1.3	<ul style="list-style-type: none"> <li>◆ Sales below target, Semis fixed cost above expectations, DP fixed cost below expectations, Inorganic fixed cost in line with expectations</li> <li>◆ DP OP above target, Semis OP below target, Inorganic OP in line with target</li> </ul>
Agro	Sales	63.0	58.6	+4.4	<ul style="list-style-type: none"> <li>◆ Above target: Fluralaner, ALTAIR, ROUNUP (ML,AL), GRACIA (export)</li> <li>◆ Below target: PERMIT (export), PULSOR (export), LEIMAY (export), TARGA (export)</li> </ul>
	OP	17.7	12.9	+4.8	◆ Sales above target, fixed cost below expectations
Pharma	Sales	7.2	8.1	-0.9	<ul style="list-style-type: none"> <li>◆ Above target: LIVALO (export)</li> <li>◆ Below target: LIVALO (domestic), up-front and milestone payments</li> <li>◆ In line with target: Custom Chemicals</li> </ul>
	OP	1.5	2.0	-0.5	◆ Sales below target, up-front and milestone payments below expectations fixed cost below expectations
Trading, Others, Adjustment	Sales	33.3	44.3	-11.0	◆ Trading -4.3, other domestic subs -0.1, Adjustment calculation -6.8
	OP	-0.4	0.7	-1.1	◆ Trading -0.3, other domestic subs -0.6, Adjustment calculation -0.2
Total	Sales	204.0	217.0	-13.0	
	OP	36.8	35.0	+1.8	

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# Capex/Depreciation/R&D by Segment

(¥billion)

	Capex (1)					Depreciation (2)					R&D expenses					% of Sales				
	2014	2015	2016	2017	2018E	2014	2015	2016	2017	2018E	2014	2015	2016	2017	2018E					
Chem	1.4	2.3	2.0	2.6	2.3	1.4	1.4	1.6	1.7	1.9	0.5	0.5	0.5	0.6	0.7	1.8%				
Performance M.	5.2	5.4	8.4	7.2	4.5	3.6	5.2	4.8	5.9	6.3	6.7	7.4	7.9	8.1	8.6	13.8%				
Agro	1.8	1.3	2.4	2.6	3.3	1.8	1.4	1.3	1.4	1.8	3.5	3.9	3.8	4.3	4.8	7.6%				
Pharma	0.4	0.4	0.9	0.7	0.6	0.9	0.8	0.7	0.7	0.7	2.7	2.4	2.2	2.5	2.4	33.3%				
Trading	0.0	0.0	0.0	0.0	0.3	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	-				
Others	1.0	0.8	0.6	0.6	0.9	0.7	0.8	0.4	0.7	0.8	1.6	1.6	1.7	1.7	2.0	-				
<b>Total</b>	<b>9.8</b>	<b>10.2</b>	<b>14.3</b>	<b>13.7</b>	<b>11.9</b>	<b>8.5</b>	<b>9.7</b>	<b>8.9</b>	<b>10.5</b>	<b>11.6</b>	<b>15.0</b>	<b>15.8</b>	<b>16.1</b>	<b>17.2</b>	<b>18.5</b>					
											R&D expenses/Sales					8.7%	8.9%	8.9%	8.9%	9.1%

(1) Capex

Actual - Acceptance basis

Outlook - Production commencement basis

(2) Depreciation Method

SUNEVER, ARC®, OptiStack®

- 4 year declining balance method

(50.0% of initial capex amount in the 1<sup>st</sup> year)

Other products - 8 year declining balance method

(25.0% of initial capex amount in the 1<sup>st</sup> year)

R&D Personnel (Sept. 2017) –A	450
Total Professionals (Sept. 2017) –B	1,130
<b>A/B</b>	<b>40%</b>

※Parent company only

※Round number

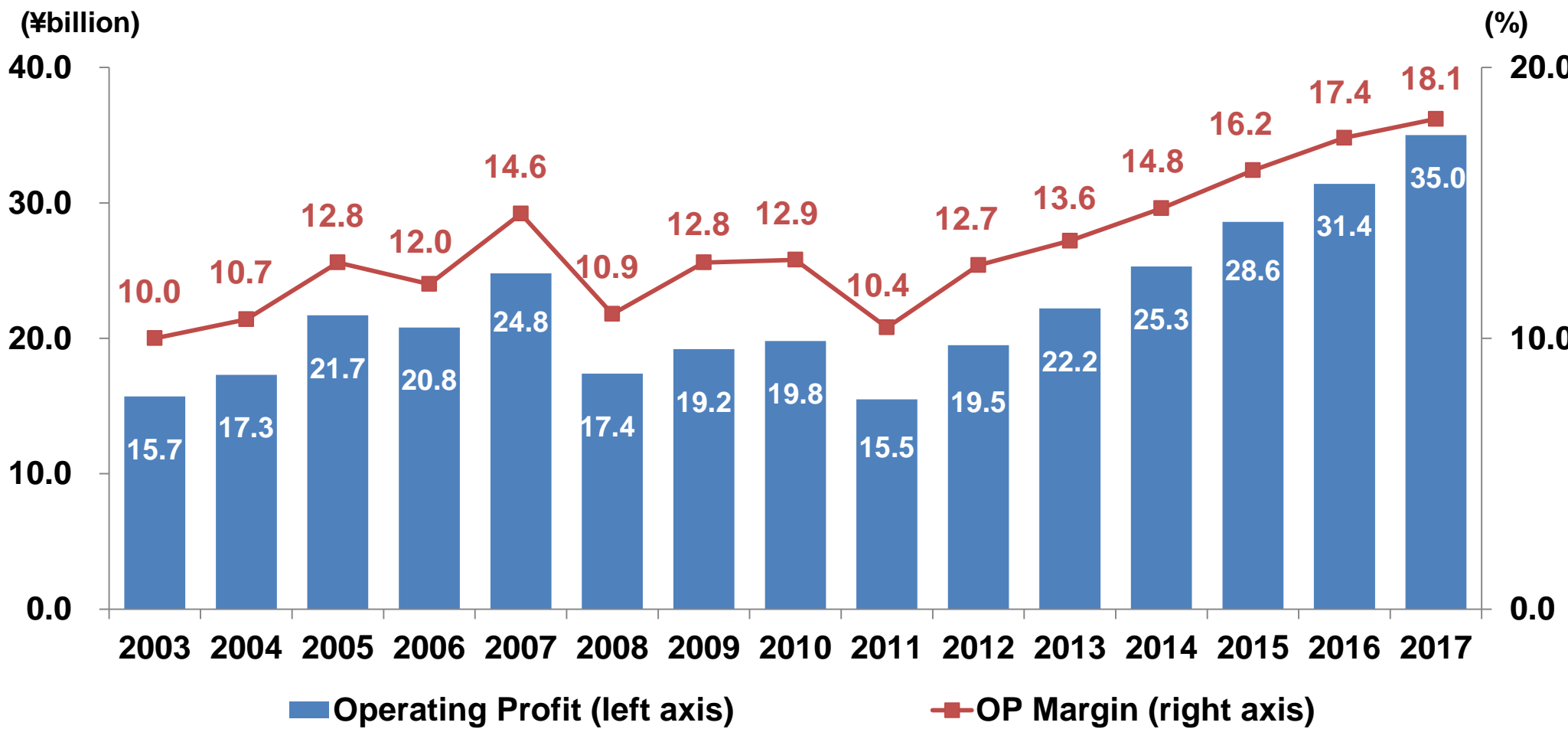
# Main Capex Items (Approval Basis)

(¥billion)

FY2015 Actual		FY2016 Actual		FY2017 Outlook		FY2018 Outlook	
Semis (Product development facilities)	2.8	NCK Semis (Production capacity expansion)	2.6	Agro (Production facilities)	1.4	Semis (Material Research Lab. new annex)	3.4
Material Research Lab. (Instruments)	1.7	Material Research Lab. (Instruments)	1.1	Material Research Lab. (Instruments)	1.0	Material Research Lab. (Instruments)	1.3
Agro (Formulation facilities)	1.2	Semis (Analyzing and evaluation R&D equipment)	1.0	Chemical Research Lab. (Instruments)	0.6	Chemical Research Lab. (Instruments)	0.8
SUNEVER (Raw materials products)	1.0	Chemical Research Lab. (Instruments)	0.6	Display (Test facilities)	0.3	New products (production facilities)	0.6
Semis (Analyzing and evaluation R&D equipment)	0.8	SNOWTEX (Production capacity expansion)	0.5	Biological Research Lab. (Instruments)	0.3	Agro (Product development facilities)	0.6
Semis (Production capacity expansion)	0.8	NCK SUNEVER (Production capacity expansion)	0.3	Display (production facilities)	0.3	TEPIC (Production capacity expansion)	0.5
NCK Semis (Production capacity expansion)	0.7	SNOWTEX (Production capacity expansion)	0.3			Biological Research Lab. (Instruments)	0.4
Custom Chemicals (Production capacity expansion)	0.4	Biological Research Lab. (Instruments)	0.2			SNOWTEX (Production capacity expansion)	0.3
TEPIC (Production capacity expansion)	0.3	NCK R&D Center (Instruments)	0.2				
Biological Research Lab. (Instruments)	0.2						
NCK R&D Center (Instruments)	0.2						

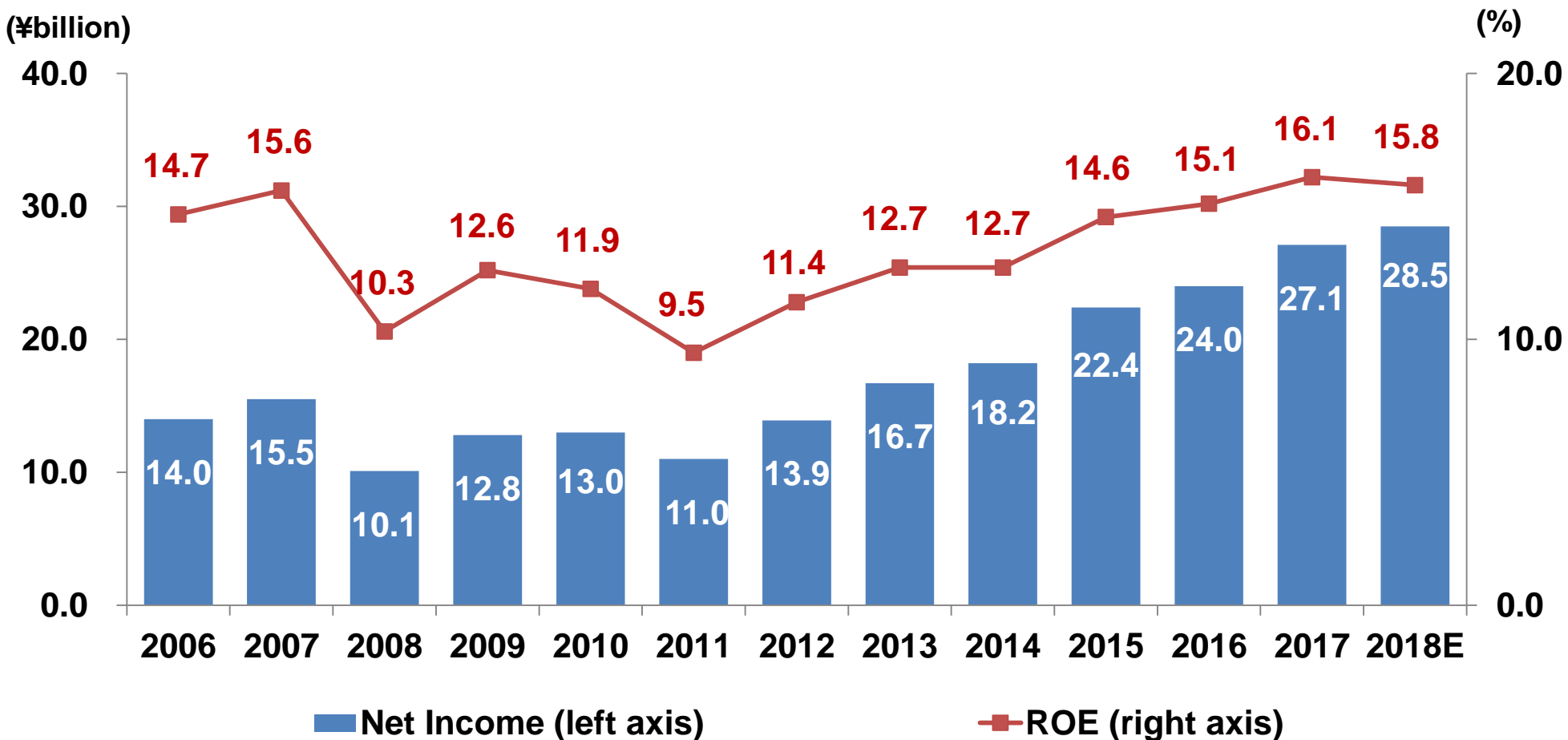
# Our Characteristics - (A) Recording Stable OP Margin

◆ NCI has recorded more than 10% OP margin in 15 consecutive years (FY2003-2017)



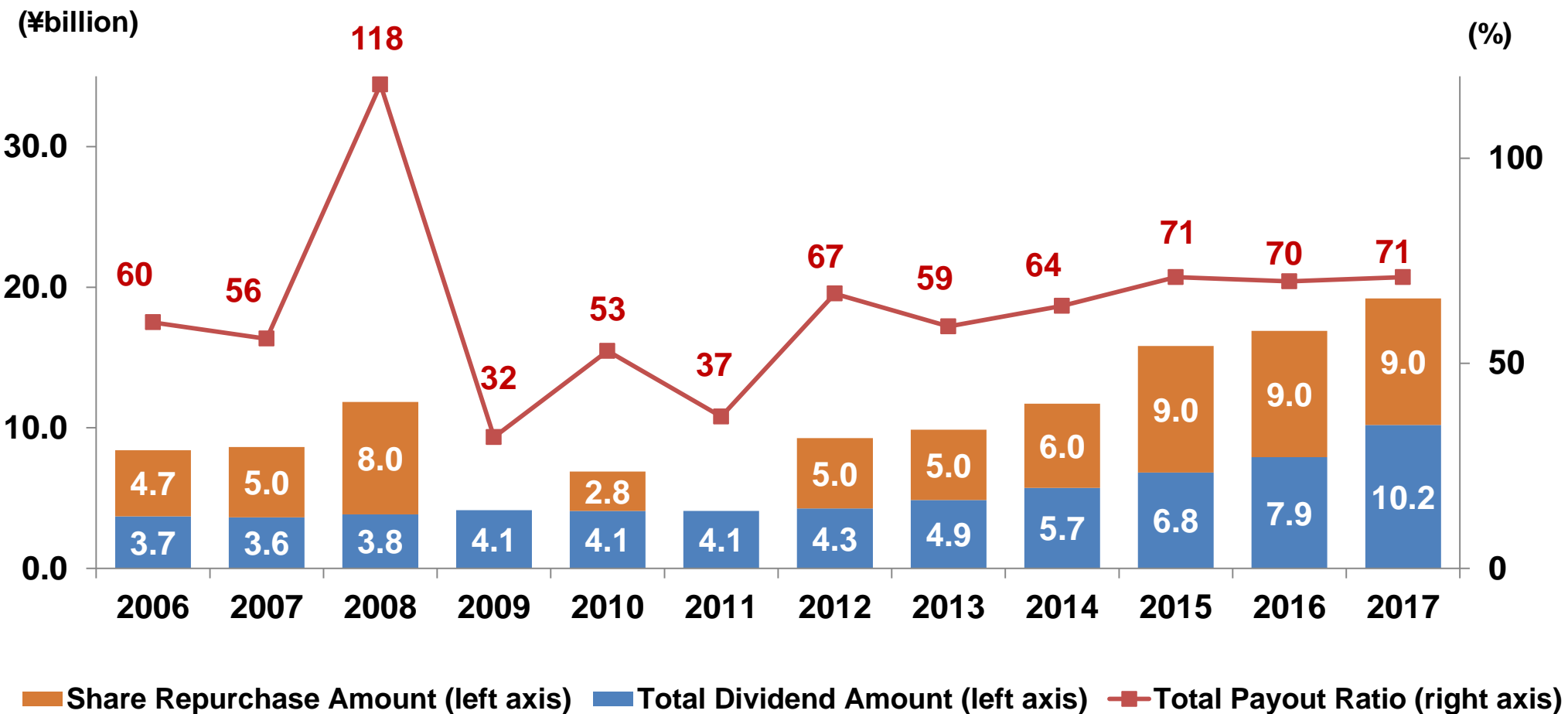
# Our Characteristics - (B) High ROE

- ◆ The most important financial indicator for a long time
- ◆ Target : Maintain above 14% (FY2017 Actual 16.1%)  
(Mid-Term Business Plan Vista 2021 (FY2016-2021))



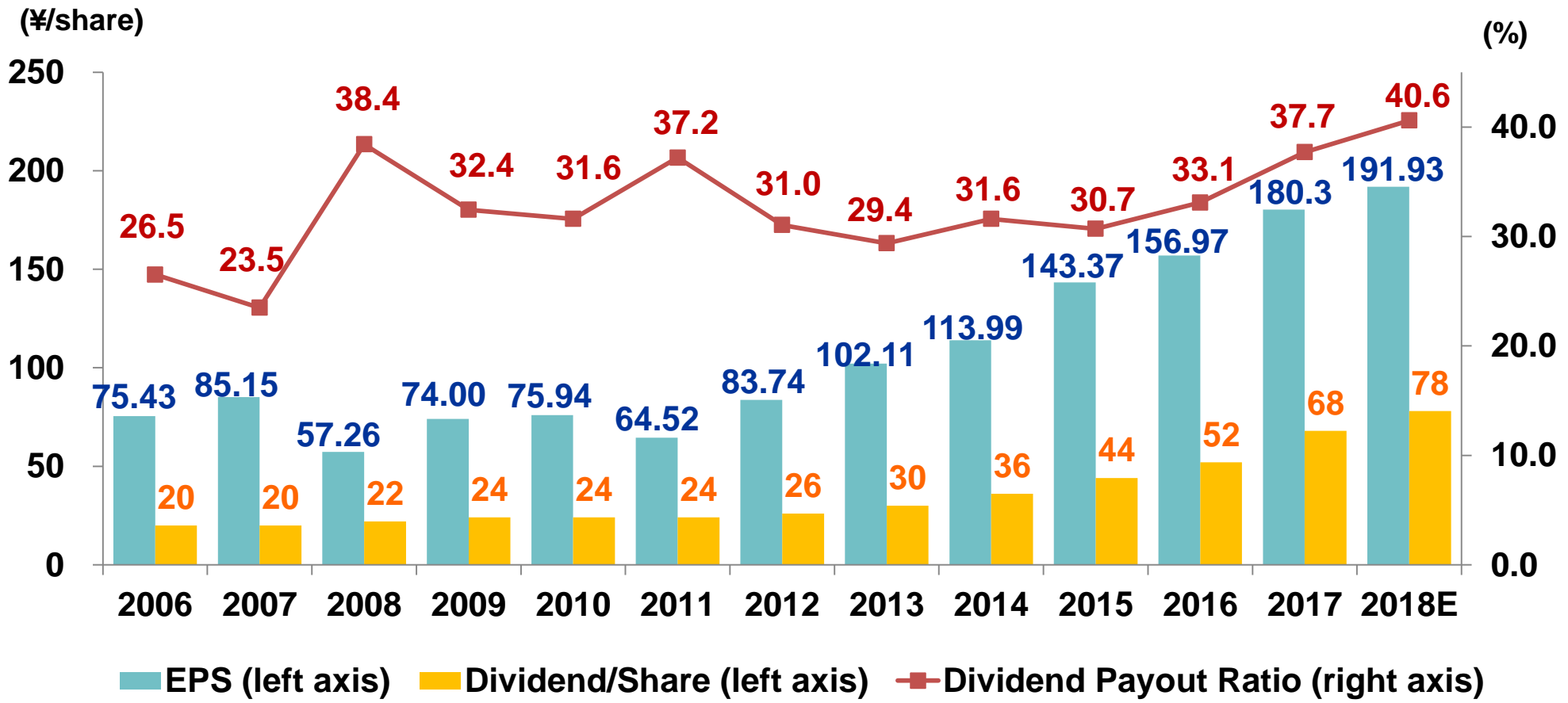
# Our Characteristics - (C) Shareholders Return Policy

- ◆ Maintaining an aggressive shareholders return policy
- ◆ Target : Maintain 70% total payout ratio (FY2017 Actual 70.7%)  
(Mid-Term Business Plan Vista 2021 (FY2016-2021))



# Our Characteristics - (D) Shareholders Return Policy - Dividend

- ◆ Maintaining about 30% dividend payout ratio in recent years
- ◆ Target : Gradually increase to 40% in FY2018  
 (FY2016 Actual 33.1%, FY2017 Actual 37.7%)  
 (Mid-Term Business Plan Vista 2021 (FY2016-2021))





# Our Characteristics - (E) Shareholders Return Policy - Share Repurchase

- ◆ Started share repurchase in 2006 only to enhance ROE
- ◆ Repurchased ¥63.5 billion, 37.1 million shares (19.8% of shares issued) in total from FY2006 to FY2017
- ◆ **Cancelled all repurchased shares**
- ◆ Target : Continue to repurchase shares to achieve the 70% total payout ratio

## Shareholders Return FY2006 - 2017

Fiscal year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
Shares purchased (thousand shares)	3,500	3,399	7,355	0	2,167	0	6,372	3,263	2,764	3,333	2,621	2,292	37,066
Purchase costs (¥billion)	4.7	5.0	8.0	0.0	2.8	0.0	5.0	5.0	6.0	9.0	9.0	9.0	63.5
Shares cancelled (thousand shares)	3,000	3,635	7,000	0	3,000	0	6,000	4,000	3,000	2,000	2,000	3,000	36,635
Shares issued at FY end (million shares)	185	181	174	174	171	171	165	161	158	156	154	151	
Treasury shares at FY end (thousand shares)	1,367	1,233	1,660	1,709	885	886	1,258	522	287	1,621	2,242	1,535	

- ◆ FY2018 share repurchase program (announced on May 11, 2018)
  - Total number of shares repurchased : 1.3 million shares
  - Total amount : ¥5.0 billion
  - Period of repurchase : From May 14, 2018 to July 31, 2018
- ◆ FY2018 cancellation of treasury shares (announced on April 24, 2018)
  - Date of cancellation : May 8, 2018
  - Total number of shares cancelled : 1.0 million shares

## Cash Management Policy

Aiming to control cash balance around the level of

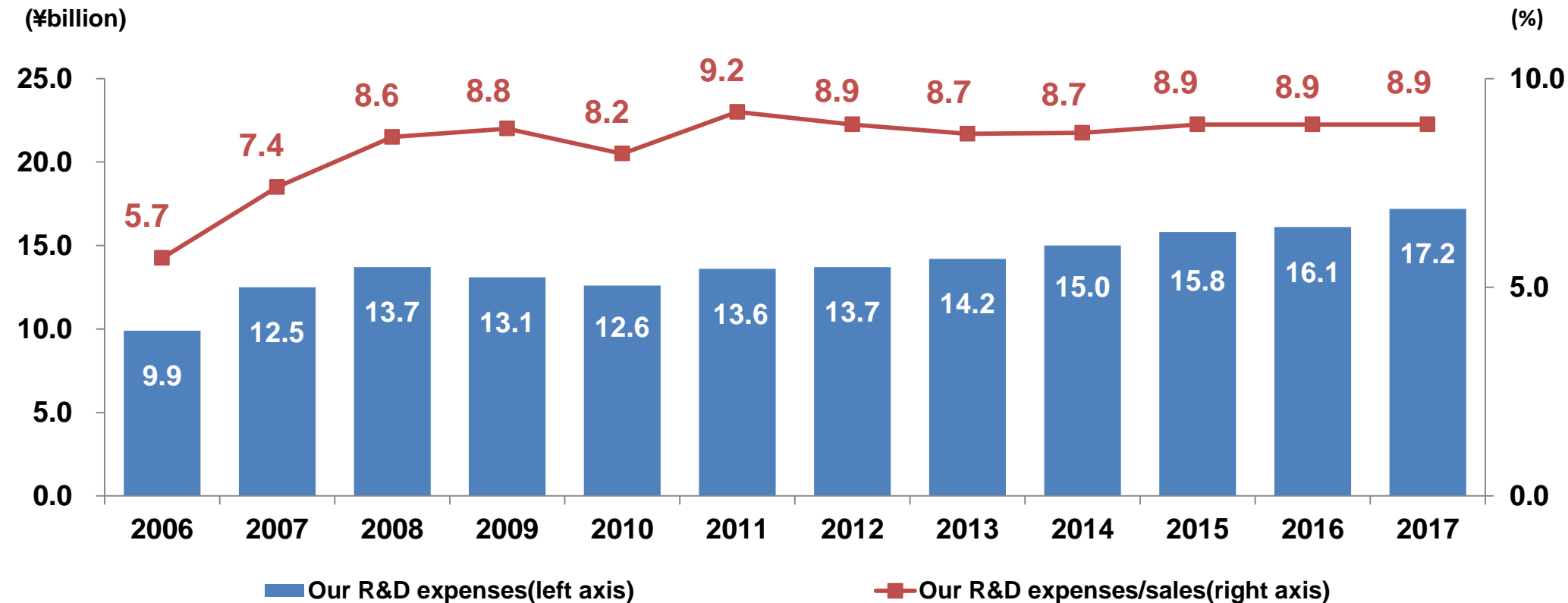
= Minimum required level

+ 1/3 of annual scheduled long-term borrowings repayment

+ 1/3 of short-term borrowings outstanding + Contingent risk reserves

# Our Characteristics- (F-1) R&D Oriented Chemical Company

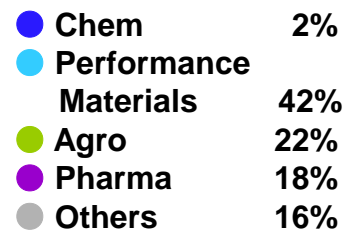
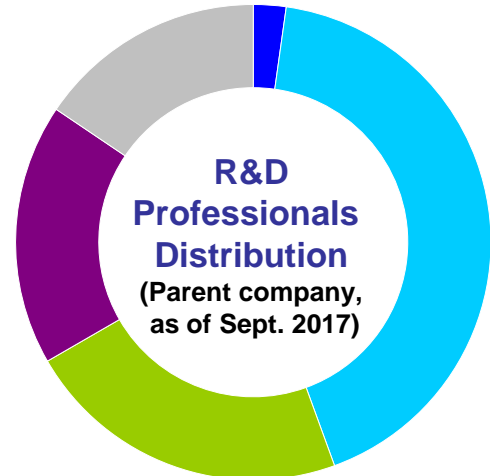
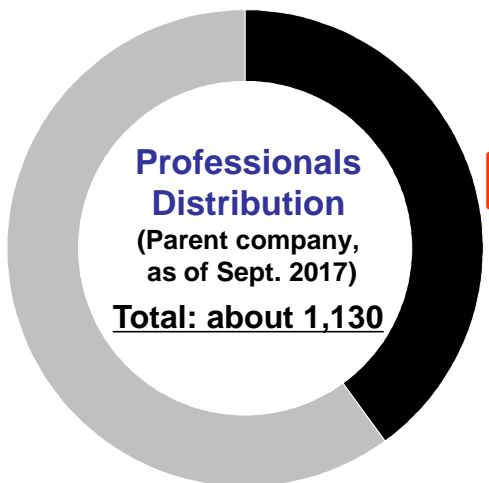
- ◆ FY2017 R&D expenses/sales: 8.9%
- ◆ Target: Maintain above 8% R&D expenses/sales  
(Mid-Term Business Plan Vista 2021 (FY2016-2021))
- ◆ 40% of profession staff assigned to R&D centers



# Our Characteristics- (F-2) R&D Oriented Chemical Company

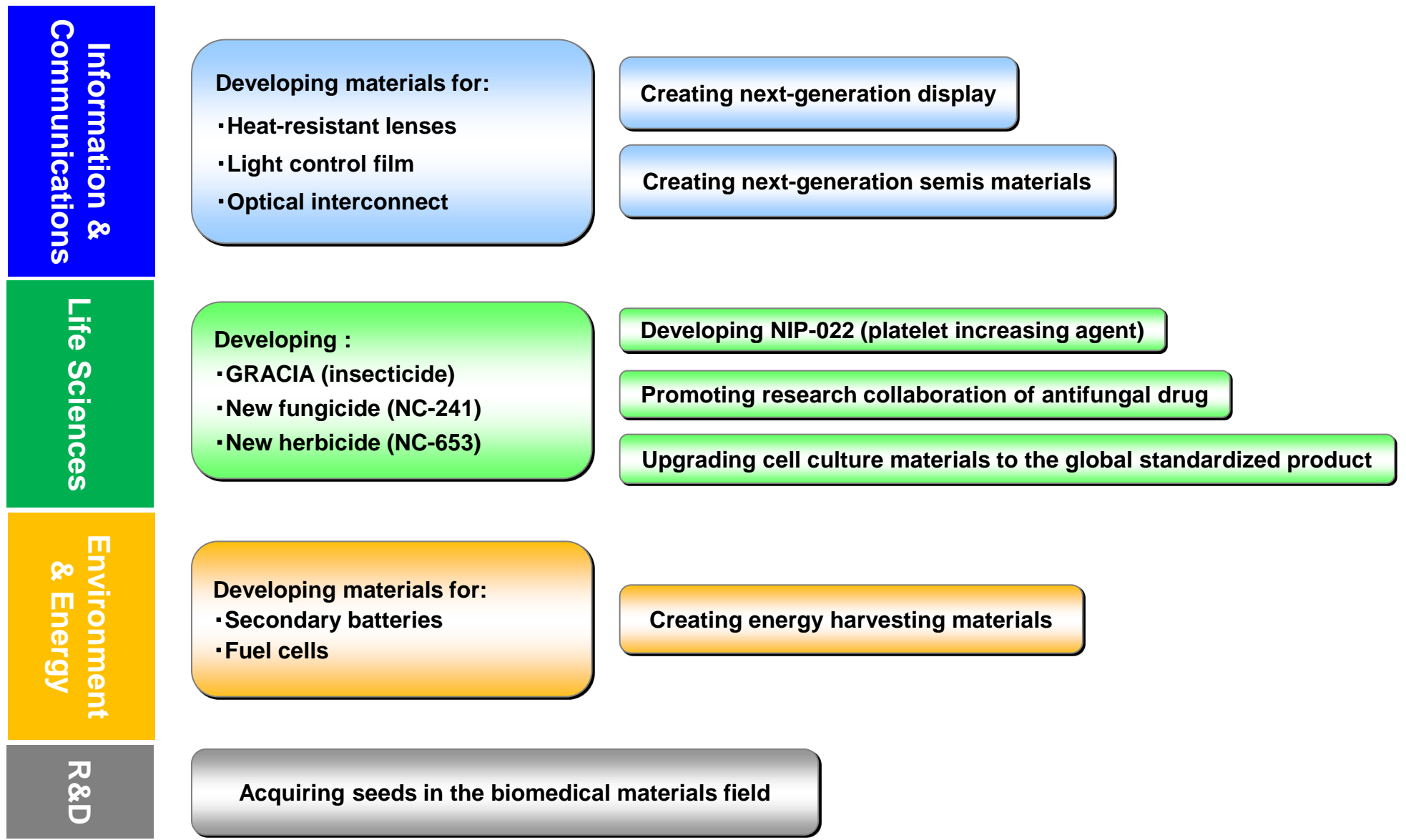
## ◆ R&D by segment

		FY2017				
Segment	Main Products	Sales (¥billion)	OP (¥billion)	OP margin	R&D expenses (¥billion)	% of Sales
Chem	Ammonia related products, sulfuric acid related products, fine chemicals	34.9	3.4	9.7%	0.6	1.7%
Performance Materials	LCD alignment coating, Bottom anti-reflective coating for semicon Inorganic materials	58.8	14.2	24.1%	8.1	13.8%
Agro	Agrochemical	58.1	16.4	28.2%	4.3	7.4%
Pharma	LIVALO (anti-cholesterol drug), Custom Chemicals	7.5	1.2	16.0%	2.5	33.3%
Others		-	-	-	1.7	-
<b>Total (including others and adjustment)</b>		<b>193.4</b>	<b>35.0</b>	<b>18.1%</b>	<b>17.2</b>	<b>8.9%</b>

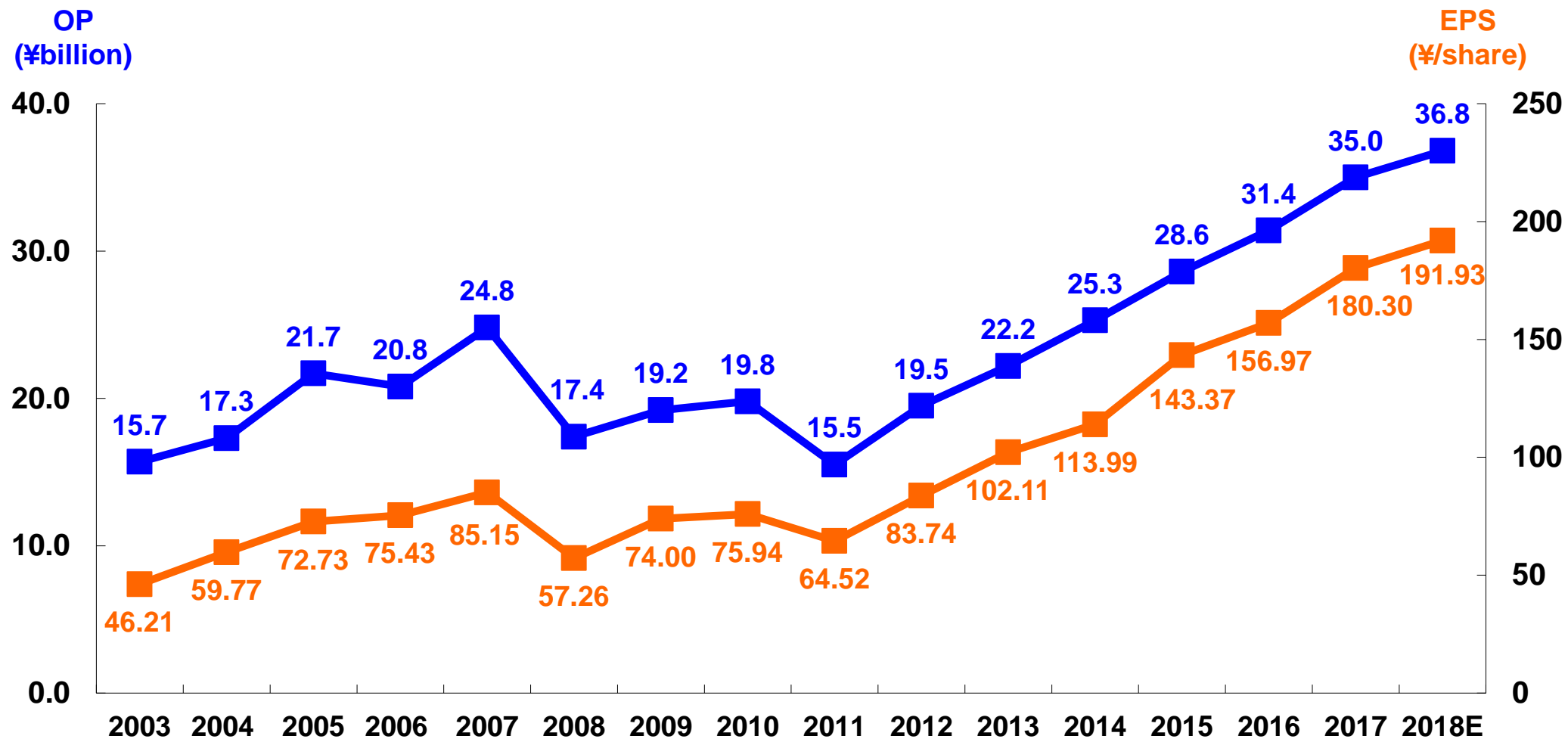


# Mid-Term Business Plan Vista 2021 (FY2016-2021)

## Initiatives for 2019 Onwards (G)



# Long-term Financial Performance Trend



# Long Term Financial Performance Trend

(¥billion)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018E
Sales	155.9	161.4	169.1	174.4	169.2	160.2	149.0	154.2	148.6	153.8	163.7	171.2	176.9	180.3	193.4	204.0
Operating Profit	15.7	17.3	21.7	20.8	24.8	17.4	19.2	19.8	15.5	19.5	22.2	25.3	28.6	31.4	35.0	36.8
Ordinary Income	14.6	17.4	21.3	21.2	24.4	16.9	19.2	19.4	15.9	20.5	23.7	26.4	29.5	31.7	36.2	38.0
Net Income	8.7	11.3	13.7	14.0	15.5	10.1	12.8	13.0	11.0	13.9	16.7	18.2	22.4	24.0	27.1	28.5
EBITDA	26.1	26.9	31.6	30.5	34.5	27.6	30.1	30.2	25.9	29.0	30.8	33.8	38.3	40.3	45.5	48.4
OP Margin	10.0%	10.7%	12.8%	12.0%	14.6%	10.9%	12.8%	12.9%	10.4%	12.7%	13.6%	14.8%	16.2%	17.4%	18.1%	18.0%
ROE	13.4%	15.2%	16.1%	14.7%	15.6%	10.3%	12.6%	11.9%	9.5%	11.4%	12.7%	12.7%	14.6%	15.1%	16.1%	15.8%
EPS(¥/share)	46.21	59.77	72.73	75.43	85.15	57.26	74.00	75.94	64.52	83.74	102.11	113.99	143.37	156.97	180.30	191.93
Dividend(¥/share)	11	11	15	20	20	22	24	24	24	26	30	36	44	52	68	78
Dividend Payout Ratio	23.8%	18.4%	20.6%	26.5%	23.5%	38.4%	32.4%	31.6%	37.2%	31.0%	29.4%	31.6%	30.7%	33.1%	37.7%	40.6%
Share Repurchase	-	-	-	4.7	5.0	8.0	-	2.8	-	5.0	5.0	6.0	9.0	9.0	9.0	5.0
Total Assets	172.6	169.4	183.2	177.3	172.7	172.3	181.4	183.4	190.1	199.2	208.0	223.9	228.2	231.7	249.0	-
Net Assets	69.2	78.5	92.0	98.1	100.1	95.7	106.5	112.4	119.6	126.7	137.8	151.3	156.9	163.7	176.4	-
Cash	5.9	4.3	8.5	11.0	7.6	9.7	14.8	21.1	27.9	31.9	30.8	31.3	35.3	35.7	37.7	-
Liabilities with Interest	57.4	44.6	41.5	32.4	34.4	45.5	42.1	39.9	38.9	38.1	36.1	35.1	33.1	30.8	28.6	-
D/E Ratio	78.0%	53.7%	38.5%	23.2%	27.2%	37.1%	26.0%	16.9%	9.3%	5.0%	4.1%	2.7%	-1.6%	-3.2%	-5.7%	-
Equity Ratio	40.1%	46.4%	50.2%	55.3%	58.0%	55.5%	58.7%	60.7%	62.4%	63.0%	65.7%	66.9%	68.1%	69.9%	70.1%	-
Capex	6.6	6.6	9.2	12.1	10.9	13.9	10.1	9.6	8.3	8.1	8.8	9.8	10.2	14.3	13.7	11.9
Depreciation	10.4	9.6	9.9	9.7	9.7	10.2	11.0	10.4	10.5	9.5	8.5	8.5	9.7	8.9	10.5	11.6
R&D Expenses	8.7	8.6	9.2	9.9	12.5	13.7	13.1	12.6	13.6	13.7	14.2	15.0	15.8	16.1	17.2	18.5
R&D Expenses/Sales	5.6%	5.3%	5.4%	5.7%	7.4%	8.6%	8.8%	8.2%	9.2%	8.9%	8.7%	8.7%	8.9%	8.9%	8.9%	9.1%

# FY2013-FY2017 Quarterly Sales by Segment (1)

(New Segmentation)

(¥billion)

	FY2013 Actual					FY2014 Actual					FY2015 Actual					FY2016 Actual					FY2017 Actual				
	1Q	2Q	3Q	4Q	Total	1Q	2Q	3Q	4Q	Total	1Q	2Q	3Q	4Q	Total	1Q	2Q	3Q	4Q	Total	1Q	2Q	3Q	4Q	Total
Chem	9.3	8.6	8.8	8.8	35.5	8.5	8.2	9.1	8.5	34.3	8.7	8.0	9.0	8.6	34.3	8.5	8.0	9.1	9.2	34.8	8.8	7.9	9.2	9.0	34.9
Fine	2.7	2.6	2.3	2.3	9.9	2.7	2.6	2.8	2.5	10.6	3.0	2.5	2.5	2.6	10.6	2.8	2.5	2.7	2.7	10.7	2.8	2.5	2.8	2.5	10.6
Basic	6.6	6.0	6.5	6.5	25.6	5.8	5.6	6.3	6.0	23.7	5.7	5.5	6.5	6.0	23.7	5.7	5.5	6.4	6.5	24.1	6.0	5.4	6.4	6.5	24.3
P.M	10.3	10.3	11.1	11.1	42.8	11.8	12.4	13.0	12.2	49.4	13.0	13.0	13.6	12.2	51.8	12.6	12.9	13.8	13.5	52.8	14.1	15.0	15.1	14.6	58.8
Agro	9.9	6.1	5.5	17.6	39.1	12.3	6.2	5.7	21.5	45.7	13.6	7.5	5.0	21.4	47.5	14.5	9.5	4.2	23.8	52.0	14.6	11.5	6.4	25.6	58.1
Pharma	3.1	3.3	3.0	2.2	11.6	2.5	2.5	2.1	1.7	8.8	2.1	1.6	3.5	1.5	8.7	2.2	1.5	2.4	1.9	8.0	2.1	1.4	2.3	1.7	7.5
Trading	12.7	11.8	12.8	13.4	50.7	14.1	13.2	14.1	13.0	54.4	14.7	12.8	14.9	13.2	55.6	14.4	13.2	13.7	13.9	55.2	14.6	14.5	15.9	14.5	59.5
Others	4.6	5.1	4.9	6.8	21.4	3.8	4.7	4.6	7.8	20.9	4.1	4.8	4.7	7.3	20.9	4.0	4.6	5.8	9.6	24.0	5.4	4.3	4.6	7.2	21.5
Adjust	-9.7	-9.0	-8.9	-9.8	-37.4	-10.5	-9.8	-10.7	-11.3	-42.3	-11.0	-9.2	-11.0	-10.7	-41.9	-11.1	-10.3	-11.4	-13.7	-46.5	-12.2	-11.0	-11.8	-11.9	-46.9
<b>Total</b>	<b>40.2</b>	<b>36.2</b>	<b>37.2</b>	<b>50.1</b>	<b>163.7</b>	<b>42.5</b>	<b>37.4</b>	<b>37.9</b>	<b>53.4</b>	<b>171.2</b>	<b>45.2</b>	<b>38.5</b>	<b>39.7</b>	<b>53.5</b>	<b>176.9</b>	<b>45.1</b>	<b>39.4</b>	<b>37.6</b>	<b>58.2</b>	<b>180.3</b>	<b>47.4</b>	<b>43.6</b>	<b>41.7</b>	<b>60.7</b>	<b>193.4</b>

(1) Including inter-segment sales/transfers

# FY2013-FY2017 Quarterly OP by Segment

(New Segmentation)

(¥billion)

	FY2013 Actual					FY2014 Actual					FY2015 Actual					FY2016 Actual					FY2017 Actual				
	1Q	2Q	3Q	4Q	Total	1Q	2Q	3Q	4Q	Total	1Q	2Q	3Q	4Q	Total	1Q	2Q	3Q	4Q	Total	1Q	2Q	3Q	4Q	Total
Chem	1.0	-0.2	0.6	0.5	1.9	1.0	-0.6	0.6	0.9	1.9	1.5	-0.1	1.2	1.3	3.9	1.5	-0.2	1.3	1.2	3.8	1.5	-0.2	1.2	0.9	3.4
P.M	2.1	2.3	2.3	2.1	8.8	3.3	3.4	3.2	2.1	12.0	3.4	2.9	3.6	2.1	12.0	3.0	3.2	3.8	2.5	12.5	3.6	4.1	4.0	2.5	14.2
Agro	2.3	0.1	-0.8	4.6	6.2	4.0	0.0	-0.5	5.7	9.2	4.4	1.8	-1.3	5.9	10.8	4.5	2.4	-2.0	8.3	13.2	4.5	3.6	-0.6	8.9	16.4
Pharma	1.4	1.7	1.4	0.4	4.9	0.8	0.8	0.4	0.3	2.3	0.4	0.2	1.6	-0.2	2.0	0.6	0.0	0.8	0.3	1.7	0.5	0.0	0.6	0.1	1.2
Trading	0.4	0.3	0.4	0.4	1.5	0.5	0.4	0.5	0.3	1.7	0.5	0.4	0.5	0.4	1.8	0.4	0.4	0.5	0.4	1.7	0.4	0.5	0.5	0.4	1.8
Others	0.1	0.1	0.1	0.5	0.8	-0.1	0.0	0.1	0.6	0.6	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.2	0.8	1.0	0.1	0.1	0.1	0.3	0.6
Adjust	-0.6	-0.4	-0.5	-0.4	-1.9	-0.6	-0.4	-0.7	-0.7	-2.4	-0.8	-0.3	-0.7	-0.6	-2.4	-0.5	-0.6	-0.6	-0.8	-2.5	-0.6	-0.8	-0.7	-0.5	-2.6
<b>Total</b>	<b>6.7</b>	<b>3.9</b>	<b>3.5</b>	<b>8.1</b>	<b>22.2</b>	<b>8.9</b>	<b>3.6</b>	<b>3.6</b>	<b>9.2</b>	<b>25.3</b>	<b>9.4</b>	<b>4.9</b>	<b>4.9</b>	<b>9.4</b>	<b>28.6</b>	<b>9.5</b>	<b>5.2</b>	<b>4.0</b>	<b>12.7</b>	<b>31.4</b>	<b>10.0</b>	<b>7.3</b>	<b>5.1</b>	<b>12.6</b>	<b>35.0</b>
OPMargin	16.7%	10.6%	9.3%	16.4%	13.6%	21.0%	9.6%	9.6%	17.2%	14.8%	20.9%	12.6%	12.5%	17.6%	16.2%	21.1%	13.3%	10.6%	21.9%	17.4%	21.2%	16.6%	12.3%	20.7%	18.1%



# Sales and Operating Profit by Segment (1) (2)

<Sales (A)>

(¥billion)

	FY2011		FY2012		FY2013		FY2014		FY2015		FY2016		FY2017		FY2018E	
Chem	36.9	24.8%	34.5	22.4%	35.5	21.7%	34.3	20.0%	34.3	19.4%	34.8	19.3%	34.9	18.0%	38.0	18.6%
P.M	34.0	22.9%	37.4	24.3%	42.8	26.1%	49.4	28.9%	51.8	29.3%	52.8	29.3%	58.8	30.4%	62.5	30.6%
Agro	33.8	22.7%	35.4	23.0%	39.1	23.9%	45.7	26.7%	47.5	26.9%	52.0	28.8%	58.1	30.0%	63.0	30.9%
Pharma	10.0	6.7%	12.7	8.3%	11.6	7.1%	8.8	5.1%	8.7	4.9%	8.0	4.4%	7.5	3.9%	7.2	3.5%
Trading	44.8	30.1%	46.6	30.3%	50.7	31.0%	54.4	31.8%	55.6	31.4%	55.2	30.6%	59.5	30.8%	64.7	31.7%
Others	20.0	13.5%	21.2	13.8%	21.4	13.1%	20.9	12.2%	20.9	11.8%	24.0	13.3%	21.5	11.1%	23.6	11.6%
Adj	-30.9	-20.8%	-34.0	-22.1%	-37.4	-22.8%	-42.3	-24.7%	-41.9	-23.7%	-46.5	-25.8%	-46.9	-24.3%	-55.0	-27.0%
Total	148.6	100%	153.8	100%	163.7	100%	171.2	100%	176.9	100%	180.3	100%	193.4	100%	204.0	100%

<Segment Assets (D)>

<OP (B)>

Chem	1.6	10.3%	1.9	9.7%	1.9	8.6%	1.9	7.5%	3.9	13.6%	3.8	12.1%	3.4	9.7%	3.9	10.6%
P.M	4.8	31.0%	7.2	36.9%	8.8	39.6%	12.0	47.4%	12.0	42.0%	12.5	39.8%	14.2	40.6%	14.1	38.3%
Agro	4.4	28.4%	5.0	25.6%	6.2	27.9%	9.2	36.4%	10.8	37.8%	13.2	42.0%	16.4	46.9%	17.7	48.1%
Pharma	4.6	29.7%	5.2	26.7%	4.9	22.1%	2.3	9.1%	2.0	7.0%	1.7	5.4%	1.2	3.4%	1.5	4.1%
Trading	1.3	8.4%	1.4	7.2%	1.5	6.8%	1.7	6.7%	1.8	6.3%	1.7	5.4%	1.8	5.1%	2.0	5.4%
Others	0.3	1.9%	0.7	3.6%	0.8	3.6%	0.6	2.4%	0.5	1.7%	1.0	3.2%	0.6	1.7%	0.2	0.5%
Adj	-1.5	-9.7%	-1.9	-9.7%	-1.9	-8.6%	-2.4	-9.5%	-2.4	-8.4%	-2.5	-8.0%	-2.6	-7.4%	-2.6	-7.1%
Total	15.5	100%	19.5	100%	22.2	100%	25.3	100%	28.6	100%	31.4	100%	35.0	100%	36.8	100%

FY2017	
Chem	27.0 10.8%
P.M	52.9 21.2%
Agro	56.6 22.7%
Pharma	9.1 3.7%
Trading	23.4 9.4%
Others	9.6 3.9%
Adj	70.4 28.3%
Total	249.0 100%

<OP Margin (C)=(B)/(A)>

Chem	4.3%	5.5%	5.4%	5.5%	11.4%	10.9%	9.7%	10.3%
P.M	14.1%	19.3%	20.6%	24.3%	23.2%	23.7%	24.1%	22.6%
Agro	13.0%	14.1%	15.9%	20.1%	22.7%	25.4%	28.2%	28.1%
Pharma	46.0%	40.9%	42.2%	26.1%	23.0%	21.3%	16.0%	20.8%
Trading	2.9%	3.0%	3.0%	3.1%	3.2%	3.1%	3.0%	3.1%
Others	1.5%	3.3%	3.7%	2.9%	2.4%	4.2%	2.8%	0.8%
Total	10.4%	12.7%	13.6%	14.8%	16.2%	17.4%	18.1%	18.0%

<ROA (E)=(B)/(D)>

Chem	14.1%
P.M	23.6%
Agro	23.3%
Pharma	18.7%
Trading	7.3%
Others	10.4%
Total	12.6%

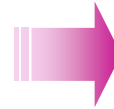
(1) FY2011 : Former Segmentation, FY2012- : New Segmentation

(2) Including inter-segment sales/transfers

# New Segmentation (From October 1, 2013)

## Former Segmentation

Segment	Main Products	
Chem	<b>Fine Chemicals</b>	TEPIC Melamine cyanurate HI-LITE <b>Custom Chemicals</b>
	<b>Basic Chemicals</b>	Melamine Urea, AdBlue Ammonia, Sulfuric acid, Nitric acid High purity chemicals
Performance Materials	SUNEVER, NHC, ARC® (Bottom anti-reflective coating) OptiStack® (Multi layer process materials) Micro lens SNOWTEX, Organo silica sol Alumina sol, SUNCOLLOID CELNAX	
Agro	Agro	Herbicides Insecticides Fungicide
	Active substance of Veterinary medical product	
Pharma	<b>LIVALO</b>	
Trading	Nissei Corporation	
Others	Nissan Butsuryu, Nissan Green & Landscape, Nissan Engineering, Fertilizer	
Adjustment	R&D expenses of Advanced Materials & Planning Dept. included	



## New Segmentation

Segment	Main Products	
Chem	Fine Chemicals	TEPIC Melamine cyanurate HI-LITE
	Basic Chemicals	Melamine Urea, AdBlue Ammonia, Sulfuric acid, Nitric acid High purity chemicals
Performance Materials	SUNEVER, NHC, ARC® (Bottom anti-reflective coating) OptiStack® (Multi layer process materials) Micro lens SNOWTEX, Organo silica sol Alumina sol, SUNCOLLOID CELNAX	
Agro	Agro	Herbicides Insecticides Fungicide
	Active substance of Veterinary medical product	
Pharma	<b>LIVALO</b>	
	<b>Custom Chemicals</b>	
Trading	Nissei Corporation	
Others	Nissan Butsuryu, Nissan Green & Landscape, Nissan Engineering, Fertilizer	
Adjustment	R&D expenses of Advanced Materials & Planning Dept. included	

# Main Products by Segment (New Segmentation)

Segment	Products	Main Applications
Chem	<p>◆ <b>Fine Chemicals</b> TEPIC Melamine cyanurate Environmental product</p>	<p>epoxy compound for LED sealants, solder resist, painting flame retardant HI-LITE (chlorinated isocyanuric acid for sterilizing)</p>
	<p>◆ <b>Basic Chemicals</b> Melamine AdBlue Ammonia, Sulfuric acid, Nitric acid High purity chemicals</p>	<p>adhesive agent for plywood solution of urea in demineralised water for diesel trucks to reduce NOx  agents used for cleaning semiconductors</p>
Performance Materials	<p>◆ <b>Electronic Materials</b> SUNEVER ARC®  OptiStack® NHC OPTIFOCUS ELSOURCE</p>	<p>LCD alignment coating bottom anti-reflective coating for semiconductors multi layer process material for semiconductors (Si-HM/SOC) *ARC® and OptiStack® are registered trade mark of Brewer Science, Inc. protective coating for touch panel microlens material for image sensor application hole injection layer materials for OLED</p>
	<p>◆ <b>Inorganic Materials</b> SNOWTEX  Organo silica sol Monomer sol Alumina sol SUNCOLLOID CELNAX Oilfield Materials</p>	<p>water dispersed colloidal silica sol for polishing silicon wafers, special steel sheets, NOx reduction catalyst, electronic printing materials film coating, antistatic interference shielding, electronic printing materials resin additive automotive catalyst, electronic printing materials high refractive sol for lens antistatic sol for film for enhancing oil recovery</p>
Agro	<p>◆ <b>Herbicide</b> TARGA PERMIT SIRIUS, ALTAIR ROUNDUP ◆ <b>Insecticide</b> STARMITE, SANMITE, MITOKOHNE ◆ <b>Fungicide</b> LEIMAY/ORACLE PULSOR, IKARUGA, GREATAM (THIFLUZAMIDE) ◆ <b>Animal health products</b> Fluralaner</p>	<p>soybean, rapeseed, sugarbeet corn, sugarcane, rice paddy rice non-selective herbicide for orchard, noncrop land  fruits, tea, vegetables  vegetables, potato, fruits potato, grape, turf  active substance of BRAVECTO (veterinary medical product for dogs and cats) and EXZOLT (for poultry red mites)</p>
Pharma	<p>LIVALO Custom Chemicals</p>	<p>anti-cholesterol drug custom manufacturing and process services for pharmaceutical companies</p>
Trading	Nissei Corporation	
Others	Transportation, Landscaping, Engineering, Fertilizer	

# Change of Company Name

- 1. New company name**                      **Nissan Chemical Corporation**  
**Current company name**                      **Nissan Chemical Industries, Ltd.**

- 2. Effective date**                      **July 1, 2018**

- 3. Reason for the change of company name**

**The Company was founded in 1887 as Tokyo Jinzo Hiryo, Japan’s first chemical fertilizer manufacturer. Subsequently, through repeated mergers, the Company eventually changed its name to Dainippon Jinzo Hiryo, and then in 1937 to Nissan Chemical Industries, Ltd., as it is known today.**

**Since its founding, the Company has been pursuing innovative technologies that promote social evolution, thereby taking on new business challenges. Currently, the Company provides products and services globally by the four business domains of Information & Communication, Life Sciences, Environment & Energy and Chemicals & Affiliates.**

**In April 2016, based on the understanding that the critical issue for the Nissan Chemical Group to achieve sustainable growth is expansion of its business areas, the Company launched the long-term business plan “Progress2030” with a perspective toward fiscal 2030.**

**As described, the Company has already been transcending the framework of industry in the development of its business and will accelerate this effort toward the future. To adapt the name of the Company to its business content, the name of the Company will be changed from Nissan Chemical Industries, Ltd. to Nissan Chemical Corporation.**

# Forward Looking Statements

**The forward looking statements in this material are based on information available at the time of preparation of the material. Although they reflect our current expectations, these statements are not guarantees of future performance, but include a number of risks and uncertainties. Actual results may largely differ from these statements due to various factors which may be beyond company control.**

**No information in this material is provided as an offer to buy or sell the shares of the company. We urge users of the material to make investment decision based upon own judgment.**