

## DNF (092070)

BUY (Reinstate), TP W18,000

Stock price (Apr 19, KRW)	14,200
Market cap (USD mn)	134
Shares outstanding (mn)	11
52W High/Low (KRW)	16,950/10,600
6M avg. daily turnover (USD mn)	1.2
Free float (%)	77.3
Foreign ownership (%)	6.8
Major shareholders (%)	
Myeong-Un Kim and 4 others	21.8
KB Asset Management	20.9

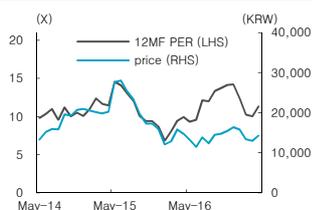
Yr to	Sales	OP	NP	EPS	% chg	EBITDA	PE	EV/EBITDA	PB	ROE	DY
Dec	(W bn)	(W bn)	(W bn)	(KRW)	(YoY)	(W bn)	(x)	(x)	(x)	(%)	(%)
2015A	71.5	19.6	17.3	1,617	55.8	24.3	9.8	7.0	2.7	33.4	-
2016A	58.2	12.1	10.4	979	(39.5)	16.8	16.8	10.4	2.4	15.8	-
2017F	72.1	13.2	11.5	1,083	10.6	19.1	13.1	8.0	1.8	15.0	-
2018F	84.6	18.2	15.5	1,449	33.8	24.3	9.8	6.1	1.5	17.1	-
2019F	102.1	21.2	16.2	1,523	5.1	27.6	9.3	5.2	1.3	15.3	-

Note: NP in equity-method accounting

## Performance

	1M	6M	12M
Absolute (%)	1.8	(6.3)	(15.5)
Rel. to Kospi (%p)	3.0	(11.0)	(21.8)

## 12MF PE trend



## Return to growth; Recommend TP W18,000

**2017 sales to rise 24% YoY to W72.1bn:** We estimate DNF's sales will reach W72.1bn in 2017 and return to 2015 levels. As DRAM industry conditions started to slow from 2H15 and DNF's major products lost market share, sales shrank 19% YoY in 2016. But we expect sales to climb 24% YoY in 2017 as hexachlorodisilane (HCDS) products regain market share. With Samsung Electronics gaining ground in the 3D NAND market, DNF's market share is picking up as well. And thanks to new product effects, DNF's sales and OP should achieve 21% and 23% CAGR, respectively, through 2018. As the company is regaining growth potential, we recommend BUY with a TP of W18,000 that equals 17x 2017F PE, and this multiple is at the upper-end of the 2015 PE band.

**Market share gain from restored confidence in HCDS:** HCDS is used to form insulation layers. DNF's share price started pulling back as it lost market share for HCDS used in 3D NAND in 2016. Its HCDS reportedly had quality issues at the time but customer confidence in product quality was recently restored. Accordingly, DNF began supplying HCDS to a 3D NAND line at Hwaseong and was named the preferred vendor at a Pyeongtaek plant. DNF plans to furnish HCDS to the Pyeongtaek plant from 2Q17 and the sales volume should grow in earnest from 3Q17. At the Pyeongtaek plant, vendors will likely be narrowed to two at end-3Q17 or early-4Q17. With the key client's 3D NAND line capex and DNF's market share upturn, HCDS sales should jump 83% YoY to W18.8bn in 2017.

**Pleasant surprise for DPT materials:** DNF's most profitable product is double-patterning technology (DPT) materials. In the past, the materials were applied only to the DRAM process but from 1H17, application started for 3D NAND as well. As DNF is also pushing to supply DPT materials to the key client's new DRAM line in 2H17, its vendor share at this client should go up. Of note, there was concern that DNF would compete against domestic rivals to chase market share but it is unlikely at this juncture. Sales of DPT materials should rise 10% YoY to W28.8bn in 2017 and contribute to a profitability upturn in 2H17.

**High-k materials sales to normalize:** High-k dielectric materials sales should also return to normal in 2017 after plummeting on inventory clearance at the key client following canister changes for high-k products. While sales of high-k materials eroded 32% YoY in 2016, the figure should increase 14% YoY to W14.9bn in 2017. Given that high-k products are supplied only to the DRAM line, significant growth is unlikely. But with sales returning to normal, earnings should remain steady.

## Jay Yoo

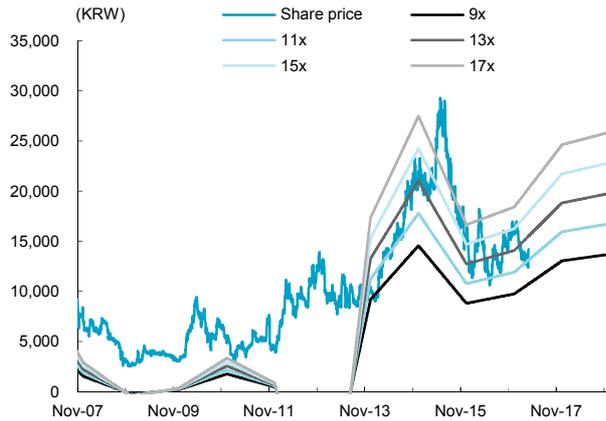
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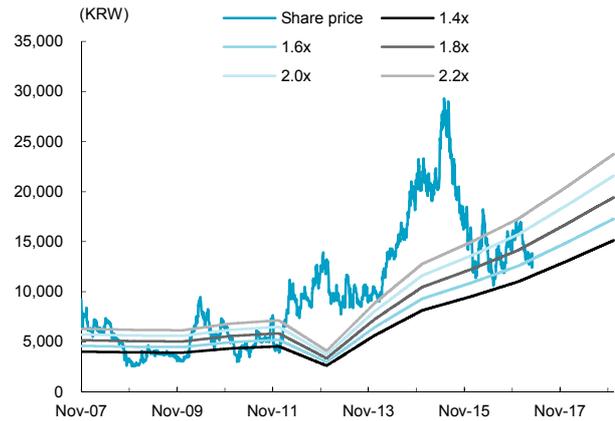
**Next-generation ACL materials and new display materials offer upside:** DNF has developed its next-generation amorphous carbon layer (ACL) materials and is trying to penetrate the said market. The company hopes to deliver visible results in 2017 at the earliest. With mounting demand for OLED deposition materials, new display materials should begin to generate sales in 2017 and fully contribute to overall sales in 2018. As DNF continues to develop new materials, sales are increasingly gaining upside potential.

**Figure 32. 12MF PE band**



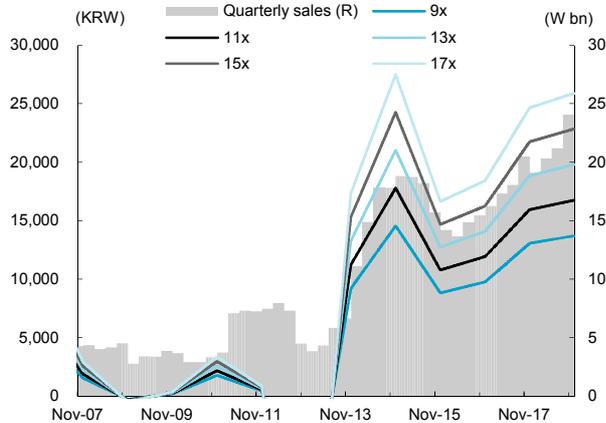
Source: Quantwise, Korea Investment & Securities

**Figure 33. 12MF PB band**



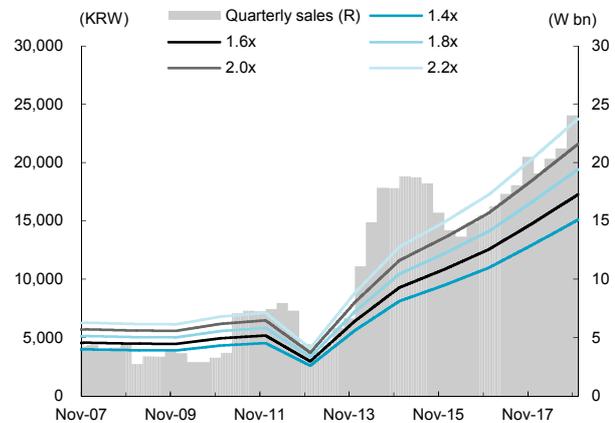
Source: Quantwise, Korea Investment & Securities

**Figure 34. 12MF PE band vs. quarterly sales**



Source: Quantwise, Korea Investment & Securities

**Figure 35. 12MF PB band vs. quarterly sales**



Source: Quantwise, Korea Investment & Securities

Table 8. Quarterly earnings estimates

(W bn, %)

	1Q16	2Q16	3Q16	4Q16	1Q17F	2Q17F	3Q17F	4Q17F	2015	2016	2017F	2018F
<b>Sales</b>	<b>14.2</b>	<b>13.7</b>	<b>14.9</b>	<b>15.5</b>	<b>16.3</b>	<b>17.3</b>	<b>18.1</b>	<b>20.5</b>	<b>71.5</b>	<b>58.2</b>	<b>72.1</b>	<b>84.6</b>
DPT	7.0	6.4	6.6	6.1	6.5	6.9	7.2	8.2	31.0	26.1	28.8	31.6
HCDS	2.6	1.7	2.4	3.6	4.2	4.5	4.7	5.3	13.0	10.3	18.8	26.2
High-κ	2.6	3.3	3.7	3.5	3.3	3.6	3.7	4.2	18.3	13.0	14.9	15.6
Others	2.0	2.3	2.2	2.4	2.2	2.4	2.5	2.7	9.2	8.9	9.8	11.2
<b>Gross profit</b>	<b>5.1</b>	<b>6.2</b>	<b>6.2</b>	<b>7.2</b>	<b>6.0</b>	<b>6.7</b>	<b>6.8</b>	<b>8.7</b>	<b>22.4</b>	<b>24.6</b>	<b>28.2</b>	<b>35.7</b>
GPM (%)	35.6	45.3	41.5	46.6	37.0	38.8	37.9	42.3	31.3	42.3	39.1	42.2
<b>OP</b>	<b>2.2</b>	<b>3.1</b>	<b>2.9</b>	<b>3.9</b>	<b>2.7</b>	<b>3.0</b>	<b>3.3</b>	<b>4.2</b>	<b>19.6</b>	<b>12.1</b>	<b>13.2</b>	<b>18.2</b>
OPM (%)	15.4	22.8	19.7	25.0	16.4	17.5	18.2	20.6	27.3	20.8	18.3	21.5
<b>EBT</b>	<b>2.9</b>	<b>3.0</b>	<b>2.8</b>	<b>2.9</b>	<b>2.9</b>	<b>3.4</b>	<b>3.6</b>	<b>4.8</b>	<b>21.9</b>	<b>11.6</b>	<b>14.6</b>	<b>19.6</b>
EBT margin (%)	20.7	21.8	18.9	18.4	17.6	19.5	19.8	23.4	30.6	19.9	20.3	23.1
<b>NP</b>	<b>2.2</b>	<b>3.1</b>	<b>2.2</b>	<b>3.0</b>	<b>2.3</b>	<b>2.7</b>	<b>2.8</b>	<b>3.8</b>	<b>17.3</b>	<b>10.4</b>	<b>11.5</b>	<b>15.5</b>
NPM (%)	15.6	22.4	14.6	19.3	13.9	15.4	15.6	18.5	24.2	17.9	16.0	18.3

Source: Korea Investment &amp; Securities

### Company overview & Glossary

DNF, founded in January 2001 and listed on the Kosdaq in November 2007, specializes in the production of organic/inorganic metal compounds used to make semiconductors. The company also sells a wide range of materials including display electronic materials. As of 2016, sales break down to DPT materials 45%, high-κ dielectric materials 22%, hexachlorodisilane (HCDS) 18%, amorphous carbon layer (ACL) 7% and others 8%.

- Double-patterning technology (DPT) material: A sacrificial layer used to perform double-patterning given the difficulty involved in using extreme ultraviolet (EUV) lithography equipment for micro-patterning
- High-κ dielectric: A material with a high dielectric constant κ used when gate capacitance decreases and leakage current increases with the micronization of a semiconductor device
- Hexachlorodisilane (HCDS): A precursor used during the deposition process

**Balance sheet**

FY-ending Dec. (W bn)	2015A	2016A	2017F	2018F	2019F
Current assets	27.8	30.7	38.1	44.7	53.9
Cash & cash equivalents	7.9	6.9	8.6	10.1	12.2
Accounts & other receivables	4.0	2.7	3.3	3.9	4.7
Inventory	13.9	16.1	19.9	23.4	28.2
Non-current assets	51.7	63.1	68.3	73.3	79.0
Investment assets	2.8	4.2	5.3	6.2	7.4
Tangible assets	43.1	54.0	57.0	60.0	63.0
Intangible assets	2.2	0.8	1.0	1.2	1.4
Total assets	79.4	93.9	106.4	118.0	132.9
Current liabilities	16.5	11.6	12.5	9.6	10.2
Accounts & other payables	4.1	3.0	3.7	4.4	5.3
ST debt & bonds	6.0	5.5	5.0	4.5	4.0
Current portion of LT debt	3.0	1.1	0.0	0.0	0.0
Non-current liabilities	2.2	11.2	11.2	10.3	8.3
Debentures	0.0	0.0	0.0	0.0	0.0
LT debt & financial liabilities	2.0	11.0	11.0	10.0	8.0
Total liabilities	18.7	22.7	23.7	19.8	18.5
Paid-in capital	5.4	5.4	5.4	5.4	5.4
Capital surplus	29.3	29.3	29.3	29.3	29.3
Other reserves	(1.7)	(1.7)	(1.7)	(1.7)	(1.7)
Retained earnings	27.8	38.2	49.8	65.2	81.4
Shareholders' equity	60.7	71.1	82.7	98.1	114.4

**Cash flow**

FY-ending Dec. (W bn)	2015A	2016A	2017F	2018F	2019F
C/F from operations	17.4	12.7	14.9	14.5	17.3
Net profit	17.3	10.4	11.5	15.5	16.2
Depreciation	4.5	5.1	5.7	5.9	6.1
Amortization	0.3	0.3	0.2	0.2	0.3
Net incr. in W/C	(6.3)	0.6	(2.6)	(7.0)	(5.3)
Others	1.7	(3.7)	0.0	0.0	0.0
C/F from investing	(11.8)	(20.2)	(11.6)	(11.6)	(12.8)
Capex	(10.2)	(15.9)	(8.7)	(8.9)	(9.1)
Decr. in fixed assets	0.2	0.0	0.0	0.0	0.0
Incr. in investment	(1.7)	(4.3)	(1.0)	(0.9)	(1.3)
Net incr. in intangible assets	(0.0)	(0.0)	(0.4)	(0.4)	(0.5)
Others	(0.0)	(0.0)	(1.5)	(1.3)	(1.9)
C/F from financing	(3.5)	6.5	(1.6)	(1.5)	(2.5)
Incr. in equity	2.9	0.0	0.0	0.0	0.0
Incr. in debt	(4.7)	6.5	(1.6)	(1.5)	(2.5)
Dividends	0.0	0.0	0.0	0.0	0.0
Others	(1.7)	(0.0)	0.0	(0.0)	0.0
C/F from others	(0.0)	(0.0)	0.0	0.0	0.0
Increase in cash	2.1	(0.9)	1.7	1.5	2.1

Note: K-IFRS (non-consolidated)

**Income statement**

FY-ending Dec. (W bn)	2015A	2016A	2017F	2018F	2019F
Sales	71.5	58.2	72.1	84.6	102.1
COGS	39.8	33.6	43.9	49.0	58.9
Gross profit	31.7	24.6	28.2	35.7	43.2
SG&A expenses	12.2	12.6	15.0	17.5	22.0
Operating profit	19.6	12.1	13.2	18.2	21.2
Financial income	0.6	0.4	0.6	0.6	0.4
Interest income	0.1	0.1	0.3	0.4	0.2
Financial expenses	0.7	0.6	0.7	0.7	0.7
Interest expenses	0.4	0.4	0.4	0.4	0.3
Other non-operating profit	2.4	(0.2)	1.6	1.5	(0.4)
Gains (Losses) in associates, subsidiaries and JV	(0.0)	(0.1)	(0.0)	(0.0)	0.0
Earnings before tax	21.9	11.6	14.6	19.6	20.6
Income taxes	4.6	1.1	3.1	4.1	4.3
Net profit	17.3	10.4	11.5	15.5	16.2
Other comprehensive profit	0.0	0.0	0.0	0.0	0.0
Total comprehensive profit	17.3	10.4	11.5	15.5	16.2
EBITDA	24.3	17.5	19.1	24.3	27.6

**Key financial data**

FY-ending Dec.	2015A	2016A	2017F	2018F	2019F
Per-share data (KRW)					
EPS	1,617	979	1,083	1,449	1,523
BPS	5,802	6,771	7,844	9,280	10,788
DPS	-	-	-	-	-
Growth (%)					
Sales growth	16.0	(18.6)	23.9	17.3	20.6
OP growth	30.4	(38.2)	9.2	37.7	16.6
NP growth	70.0	(39.6)	10.7	33.8	5.1
EPS growth	55.8	(39.5)	10.6	33.8	5.1
EBITDA growth	26.3	(28.3)	9.4	27.2	13.4
Profitability (%)					
OP margin	27.3	20.8	18.3	21.5	20.8
NP margin	24.2	17.9	16.0	18.3	15.9
EBITDA margin	34.0	30.0	26.5	28.7	27.0
ROA	23.5	12.0	11.5	13.8	12.9
ROE	33.4	15.8	15.0	17.1	15.3
Dividend yield	-	-	-	-	-
Dividend payout ratio	-	-	-	-	-
Stability					
Net debt (W bn)	1.8	6.4	2.2	(1.7)	(7.6)
Debt/equity ratio (%)	18.2	24.7	19.3	14.7	10.5
Valuation (x)					
PE	9.8	16.8	13.1	9.8	9.3
PB	2.7	2.4	1.8	1.5	1.3
EV/EBITDA	7.0	10.4	8.0	6.1	5.2

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