

1. News Summary (3 page)

2017년 8월 23일

News	
WTI comment	美재고 감소 기대에 상승...WTI 0.6%↑
Headline	타이어 주원료 `부타디엔` 값 석달만에 최고치
News 1.	"8년 후 3분의1 전기차로 바뀐다"···JP모건의 경고
News 2.	에틸렌 가격 고공행진...4분기 ECC 유입 영향은?
News 3.	-
News 4.	-

Conclusion	
	천연가스 capa가 감소한 상황에서 대체재인 부타디엔 가격 상승할 것
	탈석유시대 또는 가스시대로 접어들며 전기차 보급은 더욱 확대될 것
	연말 연초부터 미국 ECC 물량 출회되며 글로벌 화학 다운턴 시작될 것
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2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	\$/bbl	47.6	0.6	0.2	(0.5)	(7.4)	(1.0)
Dubai	\$/bbl	50.0	(1.5)	1.4	5.6	(4.5)	10.1
Gasoline	\$/bbl	67.6	(1.2)	1.5	9.7	2.1	19.4
Diesel	\$/bbl	62.3	(2.6)	(0.3)	2.3	(1.3)	11.1
Complex margin	\$/bbl	8.7	(0.4)	(0.5)	0.1	2.1	3.3
1M lagging	\$/bbl	10.3	(2.0)	(2.1)	(2.0)	2.9	1.2
Petrochemical			%	%	%	%	%
Naphtha	\$/t	466	(0.9)	1.1	7.0	0.8	17.0
Butadiene	\$/t	1,200	0.0	12.1	24.4	18.8	16.5
HDPE	\$/t	1,140	0.9	2.7	5.6	2.7	0.4
MEG	\$/t	875	0.0	4.2	2.7	13.3	42.7
PX	\$/t	804	(0.5)	1.3	2.0	(2.4)	1.6
SM	\$/t	1,203	1.3	5.2	4.3	9.1	17.1
Commodity			%	%	%	%	%
Natural Gas	\$/mmbtu	2.94	(0.8)	0.1	0.2	(11.9)	(1.3)
Natural rubber	\$/t	1,520	0.0	0.7	0.7	(2.6)	19.7
Cotton	C/lbs	68.9	0.2	1.8	(1.0)	(10.8)	1.1

*참고: 정제마진의 변동률은 %가 아닌 \$/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	08/21	\$/t	1,165	3.6	27.3	17.1	8.4
Propylene	08/21	\$/t	775	0.0	2.3	3.7	7.6
Benzene	08/21	\$/t	775	0.3	5.1	(0.6)	14.0
Toluene	08/21	\$/t	655	0.0	4.0	0.0	12.0
Xylene	08/21	\$/t	635	0.0	2.8	0.8	5.8
PP	08/21	\$/t	1,108	0.9	4.7	6.7	13.6
PVC	08/21	\$/t	890	2.3	2.3	1.1	7.2
ABS	08/21	\$/t	1,870	1.1	3.3	14.7	35.5
SBR	08/21	\$/t	1,540	2.0	2.7	(12.0)	9.2
SM	08/21	\$/t	1,193	1.9	1.9	7.2	13.0
BPA	08/21	\$/t	2,023	27.4	32.2	49.8	34.8
Caustic	08/21	\$/t	476	0.7	2.9	6.4	56.1
2-EH	08/21	\$/t	960	0.0	1.1	1.1	26.3
Caprolactam	08/21	\$/t	1,800	0.0	5.9	5.9	32.4
Solar				%	%	%	%
Polysilicon	08/16	\$/kg	15.6	0.0	12.4	15.8	(0.8)
Module	08/16	\$/W	0.32	(1.2)	(1.2)	(3.3)	(27.7)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	76.7	0.5	(1.7)	(4.2)	(6.7)	(12.8)
Shell	EUR	2,122	0.6	(0.2)	2.0	0.6	11.6
Petrochina	CNY	8.01	(0.1)	1.0	(0.2)	4.2	8.0
Gazprom	RUB	116.0	0.1	(1.4)	(2.5)	(5.3)	(15.8)
Petrobras	BRL	13.8	3.4	4.9	8.7	2.9	11.7
Refinery							
Phillips66	USD	82.2	0.4	(1.7)	(0.7)	4.7	6.8
Valero	USD	65.6	1.4	(2.3)	(3.2)	2.7	20.5
JX	JPY	533.4	(0.3)	3.2	8.2	7.0	35.8
Neste Oil	EUR	34.9	0.2	(0.9)	(7.0)	(6.3)	(9.5)

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	82.3	2.2	1.5	1.5	(3.7)	15.0
Dow Chemical	USD	64.8	1.4	1.7	(2.1)	6.2	21.1
SABIC	SAR	98.5	0.1	0.6	(1.4)	(0.4)	17.4
Formosa Pla.	TWD	93.0	0.5	0.8	1.6	5.7	19.1
Shin-Etsu	JPY	9,520	(0.6)	(1.2)	(7.9)	(3.2)	28.3
Renewable							
Wacker	EUR	105.2	1.2	3.1	5.0	8.3	25.6
First Solar	USD	46.59	1.4	(5.1)	3.2	27.9	23.6
GCL-Poly	HKD	0.91	0.0	1.1	(2.2)	2.2	(20.9)
Tesla Motors	USD	341.4	1.0	(5.8)	3.9	10.0	53.1

4. Coverage Summary

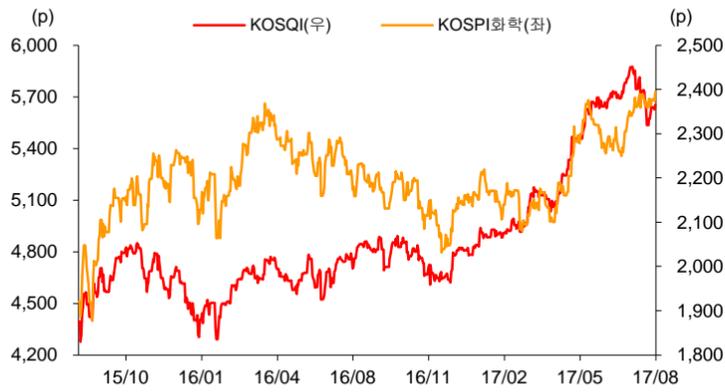
	08/22	1D	1W	1M	3M	6M	12M
KOSPI	2,365	0.4	1.3	(3.5)	2.1	13.5	15.0
KOSPI화학	5,728	0.9	0.7	2.5	2.8	11.9	9.9
LG화학	363,000	4.0	5.7	10.3	25.2	30.3	38.5
롯데케미칼	397,500	1.3	2.1	9.7	9.2	5.3	35.7
한화케미칼	35,400	1.3	(0.3)	5.8	21.2	33.6	33.3
금호석유화학	77,700	0.4	5.9	4.0	0.0	(2.8)	11.0
KCC	389,500	(1.6)	(2.1)	(9.5)	1.6	15.1	(9.8)
OCI	94,400	0.6	3.3	7.9	8.1	1.0	4.1
SKC	37,350	0.4	(1.1)	3.5	21.3	14.6	29.2
국도화학	54,400	(0.2)	(1.3)	(0.9)	12.9	4.4	(5.1)
SK이노베이션	174,500	0.3	0.3	1.7	2.6	13.7	12.2
S-Oil	116,500	0.0	(0.4)	7.9	12.0	36.1	54.7
GS	69,500	(0.1)	(1.6)	(4.9)	1.0	27.5	36.5
SK가스	110,000	2.8	(2.2)	(2.2)	(10.6)	2.8	15.4
포스코대우	22,000	1.1	(0.7)	(5.6)	(5.2)	(13.0)	(9.7)
LG상사	28,600	1.6	(0.5)	(6.4)	(11.9)	(13.9)	(17.5)
한국전력	43,800	(0.9)	0.7	(3.7)	2.8	1.7	(23.7)
한국가스공사	46,050	(1.2)	(4.0)	(7.5)	(9.7)	(5.1)	4.9

투자 의견	TP	%	P/E	P/B
* 추정치는 12M fwd 기준임				
* 모든 coverage 업체의 실적은 연결기준임				
매수	330,000	(9.1)	14.45	1.94
매수	410,000	3.1	8.21	1.45
매수	33,000	(6.8)	8.45	1.05
매수	100,000	28.7	14.77	1.48
매수	450,000	15.5	22.15	0.63
매수	100,000	5.9	19.10	0.74
매수	40,000	7.1	14.08	1.00
매수	70,000	28.7	9.13	0.66
매수	180,000	3.2	7.84	0.95
매수	100,000	(14.2)	15.65	2.27
매수	80,000	15.1	5.78	1.02
매수	150,000	36.4	6.67	0.80
매수	27,000	22.7	7.64	0.91
매수	42,000	46.9	8.84	0.92
매수	60,000	37.0	7.57	0.35
매수	60,000	30.3	7.82	0.54

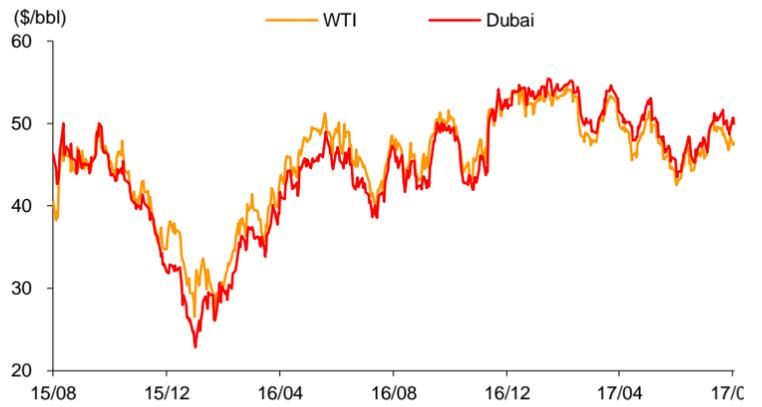
· 작성자(손지우)는 본 조사분석자료에 게재된 내용들이 본인의 의견을 정확하게 반영하고 있으며, 외부의 부당한 압력이나 간섭없이 신의성실하게 작성되었음을 확인합니다.
· 본 보고서에 언급된 종목의 경우 당사 조사분석담당자는 본인의 담당종목을 보유하고 있지 않습니다.
· 본 보고서는 기관투자자 또는 제 3자에게 사전 제공된 사실이 없습니다.
· 당사는 본 보고서의 발간시점에 해당종목을 1% 이상 보유하고 있지 않습니다.

Key Chart

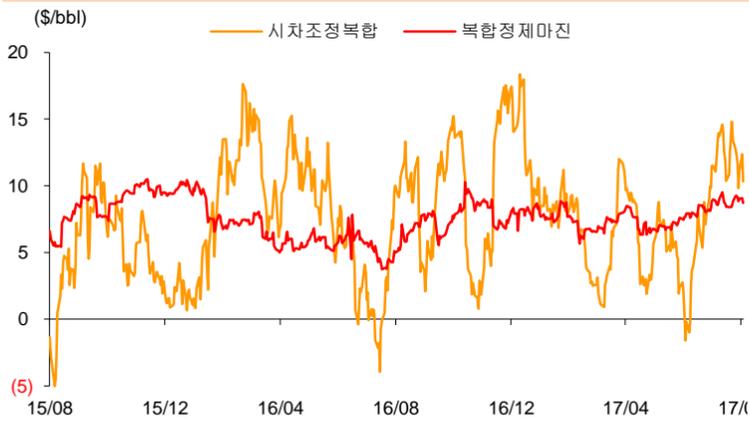
KOSPI/KOSPI화학



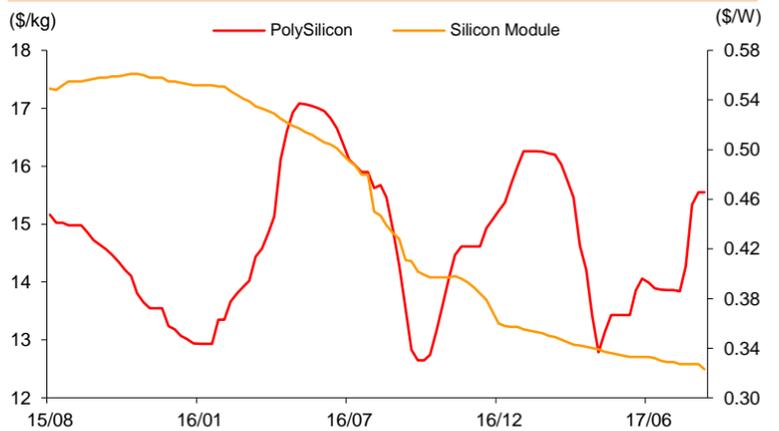
WTI/Dubai



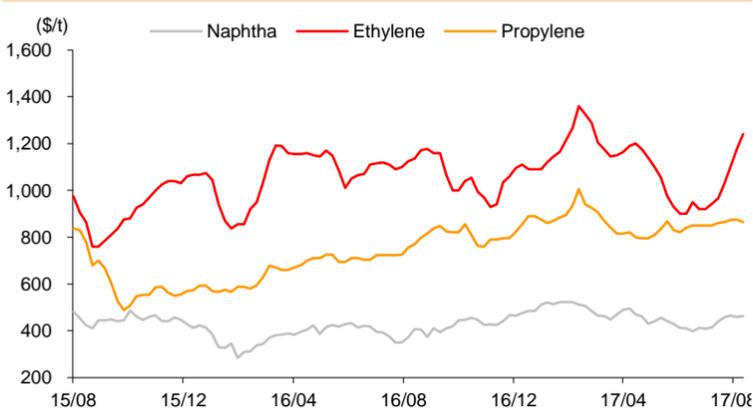
Complex & 1M lagging margin



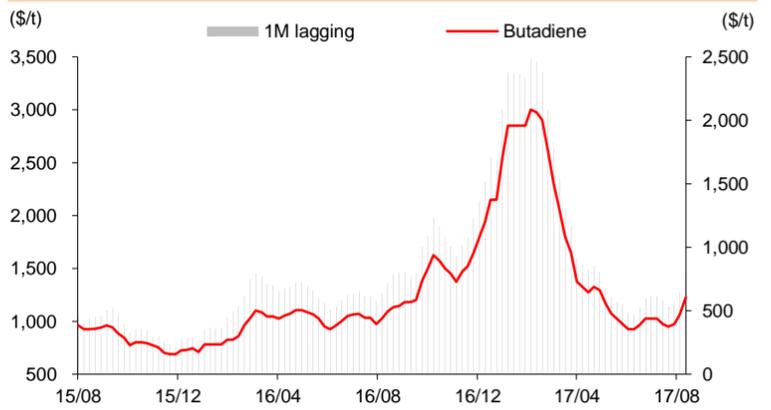
Polysilicon & Module prices



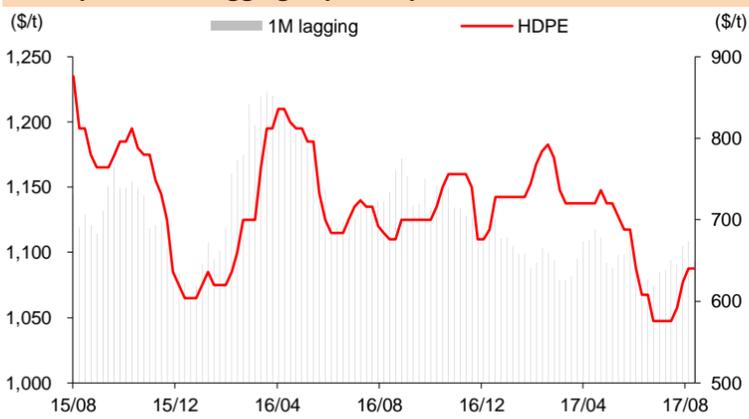
Naphtha/Ethylene/Propylene prices



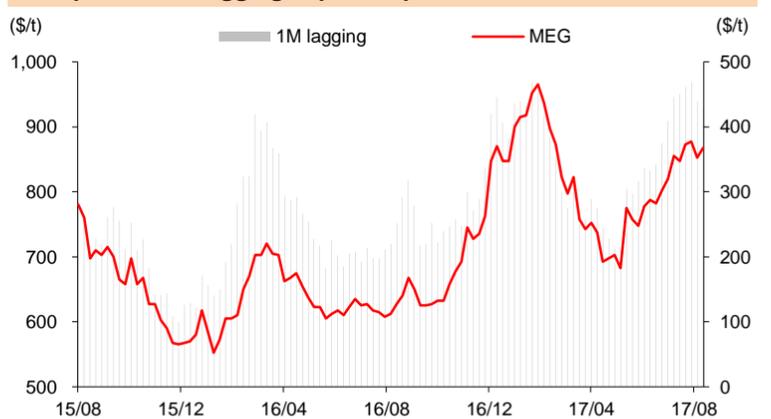
Butadiene price & 1M lagging naphtha spread



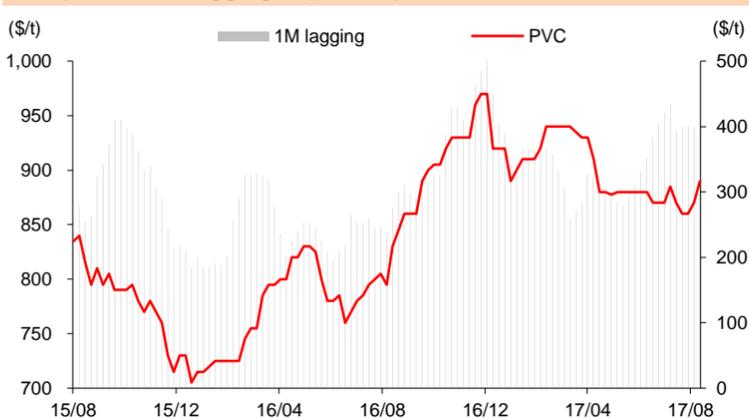
HDPE price & 1M lagging naphtha spread



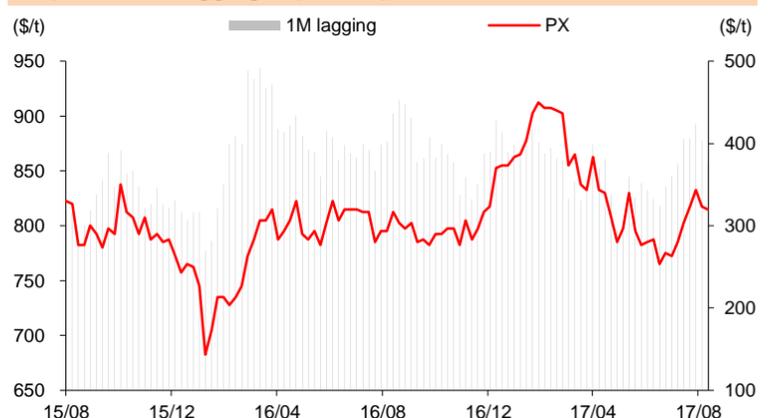
MEG price & 1M lagging naphtha spread



PVC price & 1M lagging naphtha spread



PX price & 1M lagging naphtha spread



자료: Bloomberg, Cischem, Petronet, Platts, Pvsights, SK증권
참고: 상기 데이터는 일괄적으로 과거 2년치 적용

News Comment

Headline (출처: 디지털타임스)

제목 타이어 주원료 `부타디엔` 값 석달만에 최고치
결론 천연고무 capa가 감소한 상황에서 대체재인 부타디엔 가격 상승할 것
세부

- 1) 중국 내 합성고무의 재고가 감소한 데다가 타이어 수요가 증가중임
- 2) Sinopec은 지난주 두 차례에 걸쳐 부타디엔 가격을 13% 인상
- 3) 부타디엔 공급이 정체된 점도 가격을 끌어올리는 요인
- 4) 하반기부터 미국 ECC물량이 들어오기때문에 증설은 부담되는 상황임
- 5) 천연고무 capa가 감소한 상황에서 대체재인 부타디엔 가격 상승할 것

Issue 1 (출처: 이데일리)

제목 "8년 후 3분의1 전기차로 바뀐다"···JP모건의 경고
결론 탈석유시대 또는 가스시대로 접어들며 전기차 보급은 더욱 확대될 것
세부

- 1) JP모건, "2025년까지 전기차 보급율이 35%까지 올라갈 것"
- 2) 배터리 가격 하락으로 내연차와 전기차의 가격 차이가 급격히 좁아질 것
- 3) 전기차의 유지비는 일반 자동차의 10% 수준으로 낮아질 가능성이 있음
- 4) 내연차보다 전기차가 2~3배 규모의 반도체를 더 쓰게 될 것
- 5) 탈석유시대 또는 가스시대로 접어들며 전기차 보급은 더욱 확대될 것

Issue 3

제목
결론
세부

- 1)
- 2)
- 3)
- 4)
- 5)

Issue 5

제목
결론
세부

- 1)
- 2)
- 3)
- 4)
- 5)

WTI Comment (출처: 연합뉴스)

제목 美재고 감소 기대에 상승···WTI 0.6%↑
상승 미국의 주간 원유재고가 감소할 것이라는 전망
요인

하락
요인

Issue 2 (출처: EBN)

제목 에틸렌 가격 고공행진···4분기 ECC 유입 영향은?
결론 연말 연초부터 미국 ECC 물량 출회되며 글로벌 화학 다운턴 시작될 것
세부

- 1) 에틸렌 가격 1200달러 돌파 5개월 내 최고치···4분기부터 진정
- 2) 하반기 다우케미칼·셰브론 등 미국 ECC 생산, 아시아 유입 전망
- 3) 8월초 Shell은 정제설비 화재 이후 NCC 불가항력을 선언
- 4) 대만 Formosa의 NCC 1기(에틸렌 120만톤)가 16일부터 정기보수 돌입
- 5) 연말 연초부터 미국 ECC 물량 출회되며 글로벌 화학 다운턴 시작될 것

Issue 4

제목
결론
세부

- 1)
- 2)
- 3)
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- 5)

Issue 6

제목
결론
세부

- 1)
- 2)
- 3)
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- 5)

Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.	
F/X	USD/EUR	0.850	0.846	0.852	0.857	0.890	0.947	0.883	0.951	0.901	0.904	0.909	
	Change, %		0.4	(0.2)	(0.8)	(4.5)	(10.2)	(3.7)	(10.6)	(5.7)	(5.9)	(6.5)	
	USD/JPY	109.6	109.0	110.7	111.1	111.3	113.3	100.3	117.0	121.1	108.8	112.1	
	Change, %		0.5	(1.0)	(1.4)	(1.6)	(3.3)	9.2	(6.3)	(9.5)	0.7	(2.3)	
	USD/KRW	1,133.8	1,139.0	1,135.1	1,118.4	1,118.6	1,142.4	1,126.4	1,205.8	1,131.2	1,160.5	1,140.3	
	Change, %		(0.5)	(0.1)	1.4	1.4	(0.8)	0.7	(6.0)	0.2	(2.3)	(0.6)	
	Agriculture	Corn	346.0	349.0	355.3	379.8	375.0	371.0	333.3	352.0	376.8	358.5	366.7
		Change, %		(0.9)	(2.6)	(8.9)	(7.7)	(6.7)	3.8	(1.7)	(8.2)	(3.5)	(5.7)
Soybean		933.8	932.5	921.8	1,009.0	956.5	1,022.8	1,035.3	996.5	945.4	987.5	978.5	
Change, %			0.1	1.3	(7.5)	(2.4)	(8.7)	(9.8)	(6.3)	(1.2)	(5.4)	(4.6)	
	Wheat	402.3	409.5	429.5	499.3	434.3	441.3	415.3	408.0	508.1	436.4	441.9	
	Change, %		(1.8)	(6.3)	(19.4)	(7.4)	(8.8)	(3.1)	(1.4)	(20.8)	(7.8)	(9.0)	
	Rice	12.2	12.2	12.2	12.0	11.1	9.5	10.5	9.4	11.1	10.3	10.5	
	Change, %		0.2	(0.3)	1.8	10.4	29.0	16.5	30.5	10.4	18.0	16.1	
	Oats	239.0	243.8	258.3	295.8	246.8	253.0	172.3	228.5	250.2	196.3	253.8	
	Change, %		(1.9)	(7.5)	(19.2)	(3.1)	(5.5)	38.8	4.6	(4.5)	21.8	(5.8)	
	MYR/mt	Palm Oil	2,729.0	2,703.0	2,628.0	2,612.0	2,900.0	3,022.0	2,820.0	3,218.0	2,190.3	2,653.8	2,862.8
		Change, %		1.0	3.8	4.5	(5.9)	(9.7)	(3.2)	(15.2)	24.6	2.8	(4.7)
Cocoa		1,923.0	1,930.0	1,865.0	1,968.0	2,035.0	2,028.0	2,983.0	2,126.0	3,091.6	2,854.0	1,995.8	
Change, %			(0.4)	3.1	(2.3)	(5.5)	(5.2)	(35.5)	(9.5)	(37.8)	(32.6)	(3.6)	
	Cotton	68.9	68.7	67.7	69.1	78.4	74.1	67.9	70.7	63.3	65.6	74.7	
	Change, %		0.2	1.8	(0.4)	(12.1)	(7.1)	1.4	(2.5)	8.9	5.0	(7.8)	
	Sugar	13.5	13.5	13.1	14.4	16.5	20.7	20.4	19.5	13.1	18.2	16.6	
	Change, %		(0.1)	2.9	(6.2)	(18.2)	(34.8)	(33.8)	(30.8)	2.8	(25.6)	(18.7)	
	Coffee	125.9	126.4	132.0	136.6	130.6	149.2	144.1	137.1	132.6	136.1	136.5	
	Change, %		(0.4)	(4.7)	(7.8)	(3.6)	(15.7)	(12.7)	(8.2)	(5.1)	(7.5)	(7.8)	
	Energy	WTI	47.6	47.4	47.6	45.8	50.7	53.6	47.1	53.7	48.8	43.4	49.5
		Change, %		0.6	0.2	4.1	(6.1)	(11.1)	1.3	(11.3)	(2.5)	9.8	(3.8)
Brent		51.6	51.7	50.8	48.1	53.9	55.8	49.2	56.8	53.7	45.1	52.2	
Change, %			(0.1)	1.6	7.3	(4.2)	(7.6)	4.9	(9.2)	(3.9)	14.4	(1.2)	
	Natural Gas	2.9	3.0	2.9	3.0	3.3	2.6	2.7	3.7	2.6	2.6	3.1	
	Change, %		(0.8)	0.1	(1.1)	(11.8)	13.3	9.6	(21.1)	11.7	15.1	(4.4)	
	Ethanol	1.5	1.5	1.6	1.5	1.5	1.5	1.5	1.6	1.5	1.5	1.5	
	Change, %		0.1	(0.6)	1.4	4.8	2.5	4.3	(4.0)	2.1	1.7	0.3	
	RBOB Gasoline	158.2	158.4	158.0	156.3	166.3	151.3	148.4	166.5	163.6	140.0	158.4	
	Change, %		(0.2)	0.1	1.2	(4.9)	4.5	6.6	(5.0)	(3.3)	13.0	(0.2)	
	Coal	98.4	98.4	95.0	86.5	74.8	79.8	68.2	88.4	59.0	65.5	82.9	
	Change, %		0.1	3.6	13.8	31.6	23.4	44.4	11.3	66.9	50.3	18.7	
Metal	Gold	1,285.1	1,291.9	1,271.5	1,255.1	1,260.6	1,237.6	1,339.1	1,152.3	1,160.6	1,248.5	1,242.5	
	Change, %		(0.5)	1.1	2.4	1.9	3.8	(4.0)	11.5	10.7	2.9	3.4	
	Silver	17.0	17.0	16.6	16.5	17.2	18.0	18.9	15.9	15.7	17.1	17.1	
	Change, %		0.1	2.4	3.2	(0.7)	(5.5)	(9.9)	7.1	8.4	(0.4)	(0.6)	
	Copper	6,580.0	6,586.0	6,379.0	6,004.0	5,703.0	6,040.0	4,748.5	5,535.5	5,503.1	4,872.0	5,868.8	
	Change, %		(0.1)	3.2	9.6	15.4	8.9	38.6	18.9	19.6	35.1	12.1	
	Nickel	731.0	724.9	667.4	613.2	605.5	716.5	688.1	682.0	759.5	646.4	644.0	
	Change, %		0.8	9.5	19.2	20.7	2.0	6.2	7.2	(3.8)	13.1	13.5	
	Zinc	3,119.0	3,125.5	2,959.5	2,753.5	2,633.5	2,865.0	2,280.0	2,576.0	1,941.9	2,097.5	2,732.8	
	Change, %		(0.2)	5.4	13.3	18.4	8.9	36.8	21.1	60.6	48.7	14.1	
	Lead	2,400.3	2,331.8	2,369.5	2,223.8	2,083.8	2,273.3	1,846.3	2,003.5	1,791.2	1,868.3	2,239.2	
	Change, %		2.9	1.3	7.9	15.2	5.6	30.0	19.8	34.0	28.5	7.2	
	Aluminum	16,270.0	16,285.0	15,605.0	14,335.0	13,990.0	14,010.0	12,560.0	12,765.0	12,184.0	12,373.5	13,966.6	
	Change, %		(0.1)	4.3	13.5	16.3	16.1	29.5	27.5	33.5	31.5	16.5	
	Cobalt	60,000.0	59,813.0	56,780.0	58,010.0	54,500.0	47,750.0	26,250.0	32,734.0	28,444.4	25,480.1	51,655.6	
	Change, %		0.3	5.7	3.4	10.1	25.7	128.6	83.3	110.9	135.5	16.2	
	HR Coil	621.0	621.0	621.0	617.0	613.0	617.0	596.0	633.0	461.5	519.3	620.6	
	Change, %		0.0	0.0	0.6	1.3	0.6	4.2	(1.9)	34.6	19.6	0.1	
	Scrap	372.0	372.0	360.0	355.0	350.0	320.0	265.0	302.0	252.9	275.7	342.4	
	Change, %		0.0	3.3	4.8	6.3	16.3	40.4	23.2	47.1	34.9	8.6	

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

Refining Price Data

Daily Price		08/22	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.	
Crude Oil	WTI	47.6	47.4	47.6	47.9	51.5	54.1	48.1	53.7	48.8	43.4	49.5	
	<i>Change, %</i>		<i>0.6</i>	<i>0.2</i>	<i>(0.5)</i>	<i>(7.4)</i>	<i>(11.9)</i>	<i>(1.0)</i>	<i>(11.3)</i>	<i>(2.3)</i>	<i>9.9</i>	<i>(3.7)</i>	
	Dubai	50.0	50.7	49.3	47.3	52.3	54.6	45.4	53.8	50.8	41.3	50.8	
	<i>Change, %</i>		<i>(1.5)</i>	<i>1.4</i>	<i>5.6</i>	<i>(4.5)</i>	<i>(8.5)</i>	<i>10.1</i>	<i>(7.2)</i>	<i>(1.6)</i>	<i>21.0</i>	<i>(1.5)</i>	
Crude Oil Product	Gasoline(휘발유)	67.6	68.4	66.6	61.6	66.1	69.2	56.6	69.8	69.5	56.3	65.4	
	<i>Change, %</i>		<i>(1.2)</i>	<i>1.5</i>	<i>9.7</i>	<i>2.1</i>	<i>(2.3)</i>	<i>19.4</i>	<i>(3.3)</i>	<i>(2.8)</i>	<i>20.1</i>	<i>3.3</i>	
	Kerosene(등유)	61.9	63.0	62.1	59.6	63.1	66.6	55.8	66.4	64.7	52.9	62.1	
	<i>Change, %</i>		<i>(1.7)</i>	<i>(0.3)</i>	<i>3.9</i>	<i>(1.8)</i>	<i>(7.1)</i>	<i>10.9</i>	<i>(6.8)</i>	<i>(4.4)</i>	<i>17.0</i>	<i>(0.3)</i>	
	Diesel(경유)	62.3	64.0	62.5	60.9	63.1	67.2	56.1	65.5	64.8	52.1	62.7	
	<i>Change, %</i>		<i>(2.6)</i>	<i>(0.3)</i>	<i>2.3</i>	<i>(1.3)</i>	<i>(7.3)</i>	<i>11.1</i>	<i>(4.9)</i>	<i>(3.8)</i>	<i>19.5</i>	<i>(0.7)</i>	
	Bunker-C	47.0	47.7	47.4	45.9	48.0	49.9	39.1	52.1	45.3	35.5	47.5	
	<i>Change, %</i>		<i>(1.4)</i>	<i>(0.9)</i>	<i>2.4</i>	<i>(2.2)</i>	<i>(5.8)</i>	<i>20.2</i>	<i>(9.7)</i>	<i>3.8</i>	<i>32.3</i>	<i>(1.1)</i>	
	Naphtha	50.1	50.6	49.1	45.7	49.8	55.7	42.1	53.5	52.6	42.6	50.4	
	<i>Change, %</i>		<i>(0.9)</i>	<i>2.1</i>	<i>9.7</i>	<i>0.6</i>	<i>(10.1)</i>	<i>19.1</i>	<i>(6.3)</i>	<i>(4.8)</i>	<i>17.6</i>	<i>(0.5)</i>	
	Dubai Spread	Gasoline(휘발유)	17.6	17.7	17.3	14.3	13.8	14.5	11.2	16.0	18.7	14.9	14.7
		<i>Change</i>		<i>(0.1)</i>	<i>0.3</i>	<i>3.3</i>	<i>3.8</i>	<i>3.1</i>	<i>6.4</i>	<i>1.6</i>	<i>(1.1)</i>	<i>2.6</i>	<i>2.9</i>
Kerosene(등유)		11.9	12.3	12.8	12.3	10.8	12.0	10.5	12.6	14.0	11.6	11.3	
<i>Change</i>			<i>(0.4)</i>	<i>(0.9)</i>	<i>(0.3)</i>	<i>1.2</i>	<i>(0.1)</i>	<i>1.5</i>	<i>(0.7)</i>	<i>(2.0)</i>	<i>0.4</i>	<i>0.6</i>	
Diesel(경유)		12.3	13.2	13.2	13.6	10.8	12.6	10.7	11.7	14.0	10.8	12.0	
<i>Change</i>			<i>(0.9)</i>	<i>(0.9)</i>	<i>(1.3)</i>	<i>1.5</i>	<i>(0.2)</i>	<i>1.7</i>	<i>0.6</i>	<i>(1.7)</i>	<i>1.5</i>	<i>0.4</i>	
Dubai Spread	Bunker-C	(3.0)	(3.1)	(1.8)	(1.4)	(4.3)	(4.8)	(6.3)	(1.8)	(5.5)	(5.8)	(3.2)	
	<i>Change</i>		<i>0.1</i>	<i>(1.1)</i>	<i>(1.6)</i>	<i>1.3</i>	<i>1.8</i>	<i>3.3</i>	<i>(1.2)</i>	<i>2.5</i>	<i>2.8</i>	<i>0.3</i>	
	Naphtha	0.1	(0.1)	(0.2)	(1.6)	(2.5)	1.1	(3.3)	(0.4)	1.8	1.3	(0.4)	
	<i>Change</i>		<i>0.3</i>	<i>0.3</i>	<i>1.8</i>	<i>2.7</i>	<i>(0.9)</i>	<i>3.4</i>	<i>0.5</i>	<i>(1.7)</i>	<i>(1.2)</i>	<i>0.5</i>	
Refining Margin	Simple(단순)	3.7	3.9	4.5	4.3	1.9	2.5	0.8	3.8	3.3	1.9	3.0	
	<i>Change</i>		<i>(0.2)</i>	<i>(0.8)</i>	<i>(0.7)</i>	<i>1.7</i>	<i>1.2</i>	<i>2.9</i>	<i>(0.2)</i>	<i>0.4</i>	<i>1.7</i>	<i>0.7</i>	
	Complex(복합)	8.7	9.1	9.2	8.6	6.6	7.6	5.4	8.3	9.3	7.0	7.7	
	<i>Change</i>		<i>(0.4)</i>	<i>(0.5)</i>	<i>0.1</i>	<i>2.1</i>	<i>1.1</i>	<i>3.3</i>	<i>0.5</i>	<i>(0.6)</i>	<i>1.7</i>	<i>1.0</i>	
Refining Margin	Complex(lagging)	10.3	12.4	12.4	12.4	7.4	9.2	9.1	18.0	7.3	8.5	7.4	
	<i>Change</i>		<i>(2.0)</i>	<i>(2.1)</i>	<i>(2.0)</i>	<i>2.9</i>	<i>1.1</i>	<i>1.2</i>	<i>(7.6)</i>	<i>3.1</i>	<i>1.9</i>	<i>3.0</i>	

자료 : Petronet, SK증권

참고 1) Crude Oil 가격은 현물(spot) 기준으로 선물(future) 가격과 다를 수 있음

참고 2) Gasoline은 95RON, 경유는 L/P 0.5%, Bunker-C는 380cst/4.0% 기준임

Petrochemical Price Data

Daily Price			08/22	08/21	08/18	08/17	08/16	08/15	08/14	08/11	08/10	08/09
Spot Price	Naphtha	CFR Japan	466.0	470.3	464.0	454.3	460.5	460.8	468.8	459.8	472.5	468.3
	Ethylene	CFR SE Asia	1,125.0	1,110.0	1,110.0	1,100.0	1,100.0	1,100.0	1,100.0	1,075.0	1,020.0	1,020.0
	Propylene	FOB Korea	860.0	858.0	859.0	861.0	858.0	858.0	858.0	858.0	858.0	857.0
	Butadiene	FOB Korea	1,200.0	1,200.0	1,200.0	1,200.0	1,090.0	1,070.0	1,051.0	1,051.0	910.0	910.0
	HDPE	CFR FE Asia	1,140.0	1,130.0	1,125.0	1,120.0	1,110.0	1,110.0	1,110.0	1,120.0	1,120.0	1,120.0
	LDPE	CFR FE Asia	1,170.0	1,170.0	1,170.0	1,170.0	1,170.0	1,160.0	1,160.0	1,170.0	1,170.0	1,170.0
	LLDPE	CFR FE Asia	1,130.0	1,125.0	1,120.0	1,110.0	1,100.0	1,100.0	1,100.0	1,110.0	1,120.0	1,120.0
	MEG	CFR China	875.0	875.0	865.0	857.0	845.0	840.0	825.0	850.0	868.0	870.0
	PP	CFR FE Asia	1,070.0	1,055.0	1,040.0	1,040.0	1,025.0	1,020.0	1,020.0	1,030.0	1,030.0	1,025.0
	PX	CFR China	803.7	808.0	805.0	802.7	799.7	793.3	804.3	804.7	821.5	814.2
	PTA	CFR China	630.0	630.0	630.0	631.0	629.0	635.0	635.0	634.0	637.0	636.0
	Benzene	FOB Korea	770.0	766.0	761.0	757.0	753.0	754.0	755.0	757.0	760.0	755.0
	Toluene	FOB Korea	622.5	628.5	624.5	620.5	622.5	619.0	624.0	625.0	630.0	642.0
	Xylene	FOB Korea	651.5	651.5	650.5	650.5	647.0	649.0	651.0	651.0	672.0	670.0
	SM	FOB Korea	1,203.0	1,187.0	1,171.0	1,175.5	1,151.5	1,144.0	1,141.0	1,149.0	1,155.0	1,124.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Spot Price	Naphtha	CFR Japan	462.0	459.0	438.5	455.0	470.5	407.5	484.5	493.0	399.5	464.4
	<i>Change, %</i>			0.7	5.4	1.5	(1.8)	13.4	(4.6)	(6.3)	15.6	(0.5)
	Ethylene	CFR SE Asia	1,165.0	1,125.0	915.0	995.0	1,095.0	1,075.0	990.0	1,103.7	1,040.9	1,026.3
	<i>Change, %</i>			3.6	27.3	17.1	6.4	8.4	17.7	5.6	11.9	13.5
	Propylene	CFR SE Asia	775.0	775.0	757.5	747.5	725.0	720.0	815.0	770.0	705.7	861.0
	<i>Change, %</i>			0.0	2.3	3.7	6.9	7.6	(4.9)	0.6	9.8	(10.0)
	Butadiene	CFR SE Asia	1,175.0	1,015.0	925.0	1,025.0	1,225.0	1,055.0	2,100.0	877.5	1,116.8	1,635.3
	<i>Change, %</i>			15.8	27.0	14.6	(4.1)	11.4	(44.0)	33.9	5.2	(28.1)
	Benzene	CFR SE Asia	775.0	772.5	737.5	780.0	802.5	680.0	822.5	690.0	646.7	839.3
	<i>Change, %</i>			0.3	5.1	(0.6)	(3.4)	14.0	(5.8)	12.3	19.8	(7.7)
	Toluene	CFR SE Asia	655.0	655.0	630.0	655.0	680.0	585.0	690.0	700.8	630.5	682.5
	<i>Change, %</i>			0.0	4.0	0.0	(3.7)	12.0	(5.1)	(6.5)	3.9	(4.0)
	Xylene	CFR SE Asia	635.0	635.0	617.5	630.0	670.0	600.0	675.0	699.3	627.7	668.7
	<i>Change, %</i>			0.0	2.8	0.8	(5.2)	5.8	(5.9)	(9.2)	1.2	(5.0)

Spread	Ethylene	-Naphtha	703.0	666.0	476.5	540.0	624.5	667.5	505.5	610.6	641.4	561.8
	<i>Change, %</i>			5.6	47.5	30.2	12.6	5.3	39.1	15.1	9.6	25.1
	Propylene	-Naphtha	313.0	316.0	319.0	292.5	254.5	312.5	330.5	277.0	306.2	396.6
	<i>Change, %</i>			(0.9)	(1.9)	7.0	23.0	0.2	(5.3)	13.0	2.2	(21.1)
	Butadiene	-Naphtha	713.0	556.0	486.5	570.0	754.5	647.5	1,615.5	384.5	717.3	1,170.9
	<i>Change, %</i>			28.2	46.6	25.1	(5.5)	10.1	(55.9)	85.5	(0.6)	(39.1)
	Benzene	-Naphtha	313.0	313.5	299.0	325.0	332.0	272.5	338.0	197.0	247.2	374.9
	<i>Change, %</i>			(0.2)	4.7	(3.7)	(5.7)	14.9	(7.4)	58.9	26.6	(16.5)
	Toluene	-Naphtha	193.0	196.0	191.5	200.0	209.5	177.5	205.5	207.8	231.0	218.1
	<i>Change, %</i>			(1.5)	0.8	(3.5)	(7.9)	8.7	(6.1)	(7.1)	(16.5)	(11.5)
	Xylene	-Naphtha	173.0	176.0	179.0	175.0	199.5	192.5	190.5	206.3	228.2	204.3
	<i>Change, %</i>			(1.7)	(3.4)	(1.1)	(13.3)	(10.1)	(9.2)	(16.1)	(24.2)	(15.3)

자료 : Cischem, Platts, Bloomberg, SK증권

참고 : Spread는 Polymer와 Naphtha의 가격차이임

Weekly Price		Last Week	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.	
Spot Price	HDPE	CFR SE Asia	1,087.5	1,087.5	1,047.5	1,127.5	1,137.5	1,110.0	1,142.5	1,230.1	1,134.6	1,119.0
	Change, %			0.0	3.8	(3.5)	(4.4)	(2.0)	(4.8)	(11.6)	(4.1)	(2.8)
	MEG	CFR SE Asia	867.5	852.5	847.5	775.0	692.5	627.5	847.5	780.8	660.8	818.7
	Change, %			1.8	2.4	11.9	25.3	38.2	2.4	11.1	31.3	6.0
	PVC	CFR SE Asia	890.0	870.0	870.0	880.0	880.0	830.0	920.0	820.8	823.4	897.9
	Change, %			2.3	2.3	1.1	1.1	7.2	(3.3)	8.4	8.1	(0.9)
	PP	CFR SE Asia	1,107.5	1,097.5	1,057.5	1,037.5	1,067.5	975.0	1,032.5	1,109.8	978.4	1,069.4
	Change, %			0.9	4.7	6.7	3.7	13.6	7.3	(0.2)	13.2	3.6
	2-EH	CFR Korea	960.0	960.0	950.0	950.0	965.0	760.0	865.0	930.1	772.4	949.2
	Change, %			0.0	1.1	1.1	(0.5)	26.3	11.0	3.2	24.3	1.1
	ABS	CFR SE Asia	1,870.0	1,850.0	1,810.0	1,630.0	1,665.0	1,380.0	1,635.0	1,431.1	1,347.1	1,763.8
	Change, %			1.1	3.3	14.7	12.3	35.5	14.4	30.7	38.8	6.0
	SBR	CFR SE Asia	1,540.0	1,510.0	1,500.0	1,750.0	2,050.0	1,410.0	2,000.0	1,332.1	1,483.0	2,132.8
	Change, %			2.0	2.7	(12.0)	(24.9)	9.2	(23.0)	15.6	3.8	(27.8)
	SM	CFR SE Asia	1,192.5	1,170.0	1,170.0	1,112.5	1,127.5	1,055.0	1,205.0	1,100.7	1,064.6	1,228.3
	Change, %			1.9	1.9	7.2	5.8	13.0	(1.0)	8.3	12.0	(2.9)
	Caustic	FOB NEA	476.0	472.5	462.5	447.5	447.5	305.0	422.5	296.8	316.6	442.2
	Change, %			0.7	2.9	6.4	6.4	56.1	12.7	60.4	50.4	7.6
	PX	CFR SE Asia	815.0	817.5	802.5	830.0	830.0	812.5	855.0	842.9	790.4	834.3
	Change, %			(0.3)	1.6	(1.8)	(1.8)	0.3	(4.7)	(3.3)	3.1	(2.3)
PO	CFR China	2,022.5	1,587.5	1,530.0	1,350.0	1,330.0	1,500.0	1,562.5	1,683.4	1,396.8	1,506.4	
Change, %			27.4	32.2	49.8	52.1	34.8	29.4	20.1	44.8	34.3	
Caprolactam	CFR SE Asia	1,800.0	1,800.0	1,700.0	1,700.0	1,970.0	1,360.0	1,850.0	1,581.5	1,344.9	1,914.9	
Change, %			0.0	5.9	5.9	(8.6)	32.4	(2.7)	13.8	33.8	(6.0)	
PTA	CFR SE Asia	652.5	657.5	672.5	647.5	647.5	617.5	642.5	648.0	613.7	657.4	
Change, %			(0.8)	(3.0)	0.8	0.8	5.7	1.6	0.7	6.3	(0.7)	
Spread	HDPE		625.5	628.5	609.0	672.5	667.0	702.5	658.0	737.1	735.1	654.6
	Change, %			(0.5)	2.7	(7.0)	(6.2)	(11.0)	(4.9)	(15.1)	(14.9)	(4.4)
	MEG		405.5	393.5	409.0	320.0	222.0	220.0	363.0	287.8	261.3	354.3
	Change, %			3.0	(0.9)	26.7	82.7	84.3	11.7	40.9	55.2	14.5
	PVC		428.0	411.0	431.5	425.0	409.5	422.5	435.5	327.8	423.9	433.5
	Change, %			4.1	(0.8)	0.7	4.5	1.3	(1.7)	30.6	1.0	(1.3)
	PP		645.5	638.5	619.0	582.5	597.0	567.5	548.0	616.8	578.9	605.0
	Change, %			1.1	4.3	10.8	8.1	13.7	17.8	4.7	11.5	6.7
	2-EH		498.0	501.0	511.5	495.0	494.5	352.5	380.5	437.0	372.9	484.8
	Change, %			(0.6)	(2.6)	0.6	0.7	41.3	30.9	13.9	33.6	2.7
	ABS		1,408.0	1,391.0	1,371.5	1,175.0	1,194.5	972.5	1,150.5	938.1	947.6	1,299.4
	Change, %			1.2	2.7	19.8	17.9	44.8	22.4	50.1	48.6	8.4
	SBR	BD spread	365.0	495.0	575.0	725.0	825.0	355.0	(100.0)	454.7	366.2	497.5
	Change, %			(26.3)	(36.5)	(49.7)	(55.8)	2.8	(465.0)	(19.7)	(0.3)	(26.6)
	SM		730.5	711.0	731.5	657.5	657.0	647.5	720.5	607.7	665.1	763.9
	Change, %			2.7	(0.1)	11.1	11.2	12.8	1.4	20.2	9.8	(4.4)
	Caustic											
	Change, %											
	PX		353.0	358.5	364.0	375.0	359.5	405.0	370.5	349.9	390.9	369.9
	Change, %			(1.5)	(3.0)	(5.9)	(1.8)	(12.8)	(4.7)	0.9	(9.7)	(4.6)
PO	propylene spread	1,247.5	812.5	772.5	602.5	605.0	780.0	747.5	913.4	691.1	645.4	
Change, %			53.5	61.5	107.1	106.2	59.9	66.9	36.6	80.5	93.3	
Caprolactam	benzene spread	1,025.0	1,027.5	962.5	920.0	1,167.5	680.0	1,027.5	891.6	698.2	1,075.6	
Change, %			(0.2)	6.5	11.4	(12.2)	50.7	(0.2)	15.0	46.8	(4.7)	
PTA	px spread	82.0	85.3	110.8	66.5	66.5	48.8	44.0	58.0	60.4	73.4	
Change, %			(3.8)	(26.0)	23.3	23.3	68.2	86.4	41.4	35.7	11.7	

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

Global peers

	Currency	08/22	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA		
											17E	18E	17E	18E	17E	18E	
Petrochemical																	
Dow Chemical	USD	64.8	1.4	1.7	(2.1)	6.2	1.7	21.1	13.2	79,255	15.9	14.6	2.9	2.7	9.0	8.4	
Du Pont	USD	83.0	1.4	1.8	(1.8)	7.3	4.0	18.7	13.1	72,037	21.3	20.0	6.6	5.5	13.6	12.8	
Eastman	USD	84.1	1.2	(0.8)	(1.8)	6.5	4.6	26.3	11.9	12,190	11.2	10.3	2.4	2.3	8.6	8.2	
BASF	EUR	82.3	2.2	1.5	1.5	(3.7)	(8.5)	15.0	(6.8)	88,885	14.2	14.0	2.2	2.1	7.8	7.6	
Akzo Nobel	EUR	77.7	0.4	1.5	2.2	2.6	22.9	31.9	30.8	23,243	18.1	17.5	3.1	3.0	10.0	9.6	
Arkema	EUR	95.1	1.1	1.0	(2.5)	0.1	(0.1)	20.1	2.3	8,475	13.9	12.9	1.7	1.6	6.3	6.0	
Lanxess	EUR	63.9	2.3	2.1	(2.9)	(1.2)	(5.2)	34.9	2.5	6,880	16.7	14.4	2.2	2.0	7.4	7.3	
Sumitomo Chemical	JPY	657	0.9	3.6	(3.7)	7.0	1.4	51.4	18.2	9,936	10.4	9.8	1.2	1.1	7.5	7.2	
Mitsubishi Chemical	JPY	962	(1.1)	1.5	(2.6)	15.1	9.5	59.7	27.0	13,244	9.2	9.1	1.2	1.1	6.2	6.2	
Shin-Etsu Chemical	JPY	9,520	(0.6)	(1.2)	(7.9)	(3.2)	(3.0)	28.3	5.0	37,581	19.2	17.2	1.8	1.6	8.1	7.2	
Asahi Kasei	JPY	1,251	(0.2)	(3.5)	(3.8)	17.0	13.1	46.6	22.7	16,030	14.8	14.0	1.4	1.3	7.2	6.8	
JSR	JPY	2,046	0.3	8.1	5.8	7.3	1.6	38.4	11.0	4,227	15.8	14.8	1.2	1.1	8.1	7.6	
Nitto Denko	JPY	9,631	0.3	(2.0)	(2.8)	7.2	(0.3)	36.0	7.4	15,288	19.4	17.9	2.2	2.1	8.6	8.0	
SABIC	SAR	98.5	0.1	0.6	(1.4)	(0.4)	0.7	17.4	7.6	78,776	14.8	14.3	1.8	1.7	7.5	7.3	
Yansab	SAR	56.2	0.8	5.2	3.5	1.5	(2.7)	27.9	3.2	8,429	14.4	13.6	2.3	2.3	8.9	8.4	
Formosa Plastics	TWD	93.0	0.5	0.8	1.6	5.7	0.5	19.1	4.3	19,551	14.4	14.7	1.8	1.8	19.1	19.5	
Formosa Fiber	TWD	92.8	0.9	1.3	2.2	1.8	(5.8)	12.2	(3.6)	17,962	12.8	13.3	1.7	1.6	10.2	10.6	
Nan Ya Plastics	TWD	75.6	0.0	1.5	1.1	5.9	1.7	24.3	6.2	19,800	15.8	16.3	1.7	1.7	16.9	16.1	
Sinopec Shanghai	CNY	6.75	(0.7)	1.7	(0.7)	3.2	(1.5)	7.7	4.8	9,506	13.9	13.1	2.6	2.3	7.3	7.2	
Sinopec Yizheng(Fiber)	CNY	3.20	0.0	0.0	0.6	(21.8)	(19.8)	(18.8)	(22.0)	6,150	#N/A	N/A	47.1	6.9	7.2	37.8	17.5
Reliance	INR	1,560	(0.3)	(0.8)	(1.6)	17.8	29.2	54.2	44.1	79,178	17.3	14.2	1.7	1.5	11.5	9.3	
Industries Qatar	QAR	93.2	0.0	1.7	(6.8)	(11.2)	(23.3)	(18.5)	(20.7)	15,487	15.0	13.1	1.6	1.6	53.5	48.8	
PTT Chemical	THB	74.8	1.0	5.3	6.8	2.7	4.5	18.7	18.7	10,030	10.1	10.2	1.3	1.2	5.4	5.2	
Petronas	MYR	7.2	0.0	0.7	3.3	(2.0)	(2.3)	7.8	3.2	13,455	15.9	15.8	2.0	1.9	8.6	8.5	
LG화학	KRW	363,000	4.0	5.7	10.3	26.5	29.9	35.2	39.1	22,632	14.2	13.7	1.8	1.6	6.2	5.8	
롯데케미칼	KRW	397,500	1.3	2.1	9.7	6.4	5.6	40.5	7.7	12,033	6.2	6.1	1.2	1.0	4.1	3.7	
한화케미칼	KRW	35,400	1.3	(0.3)	5.8	20.0	34.6	35.1	43.3	5,153	6.1	6.3	1.0	0.8	7.6	7.1	
금호석유	KRW	77,700	0.4	5.9	4.0	0.1	(1.0)	8.4	(5.2)	2,091	15.2	13.6	1.4	1.3	10.0	8.8	
SKC	KRW	37,350	0.4	(1.1)	3.5	26.4	13.9	31.7	13.2	1,238	10.5	9.2	0.9	0.9	9.0	7.6	
국도화학	KRW	54,400	(0.2)	(1.3)	(0.9)	14.9	4.4	(4.2)	(0.9)	279	8.9	9.6	0.7	0.7	5.2	5.2	
효성	KRW	6,910	3.3	9.7	13.3	(3.1)	(18.6)	7.0	1.6	4,900	9.3	8.0	1.4	1.2	7.4	6.6	
Average			0.7	1.7	1.0	5.3	3.0	23.7	9.8								
Refinery																	
Valero	USD	65.6	1.4	(2.3)	(3.2)	2.7	(0.7)	20.5	(4.0)	28,964	16.0	11.9	1.5	1.5	6.5	5.5	
Conoco Phillips	USD	43.2	1.6	(2.9)	1.3	(8.0)	(8.3)	1.3	(13.9)	52,560	234.7	33.4	1.8	1.8	8.8	6.5	
Formosa Petrochemical	TWD	103.0	(0.5)	(1.9)	(1.9)	(2.8)	(5.5)	9.1	(8.0)	32,402	15.6	18.3	3.2	3.1	9.6	10.8	
Andeavor	USD	93.4	0.7	(1.3)	(3.7)	12.2	6.2	25.5	6.8	14,659	18.6	12.7	1.4	1.4	8.9	6.9	
Marathon Petroleum	USD	49.7	0.4	(4.3)	(10.2)	(6.2)	(0.3)	20.9	(1.4)	25,146	18.5	14.6	2.0	2.0	8.5	7.3	
Devon Energy	USD	30.4	0.2	(1.7)	(4.9)	(20.2)	(30.5)	(31.1)	(33.4)	15,978	17.9	14.6	2.3	2.0	8.0	7.3	
Hollyfrontier	USD	27.8	0.9	(4.1)	1.7	4.2	(3.9)	6.9	(15.2)	4,925	22.2	13.2	1.0	1.1	8.2	6.2	
Phillips 66	USD	82.2	0.4	(1.7)	(0.7)	4.7	4.9	6.8	(4.8)	42,062	20.0	14.9	1.9	1.9	9.9	8.3	
Murphy Oil	USD	23.1	(0.3)	(7.6)	(8.9)	(13.7)	(16.7)	(20.5)	(25.8)	3,988	#N/A	N/A	179.1	0.9	0.9	4.4	4.2
JX Holdings	JPY	533.4	(0.3)	3.2	8.2	7.0	0.4	35.8	7.8	16,699	8.4	7.9	0.8	0.7	8.3	7.9	
Idemitsu	JPY	2,638.0	0.5	(0.1)	(4.4)	(22.4)	(25.8)	39.2	(15.0)	5,013	5.6	5.6	0.7	0.6	7.8	7.5	
Nesteoil	EUR	34.9	0.2	(0.9)	(7.0)	(6.3)	0.7	(9.5)	(4.4)	0	13.5	13.3	2.1	2.0	7.7	8.0	
Ashland	USD	61.5	0.9	0.5	(7.8)	(3.2)	2.2	8.7	14.9	3,835	14.7	16.8	1.0	1.0	8.5	9.3	
Fuchs Petrolub	EUR	47.8	1.3	0.7	(2.4)	(1.9)	8.1	18.9	19.9	7,330	24.5	23.2	4.9	4.4	14.2	13.5	
SK이노베이션	KRW	174,500	0.3	0.3	1.7	3.6	12.6	14.4	19.1	14,250	7.3	7.3	0.9	0.8	4.4	3.9	
S-Oil	KRW	116,500	0.0	(0.4)	7.9	14.2	35.9	54.5	37.5	11,584	12.5	9.7	2.1	1.9	9.6	7.1	
GS	KRW	69,500	(0.1)	(1.6)	(4.9)	2.7	28.2	37.6	28.5	5,703	6.4	6.2	0.9	0.8	7.4	7.0	
Average			0.4	(1.5)	(2.3)	(2.0)	0.4	14.1	0.5								

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임

* 국내업체의 multiple은 Dataguidepro 기준임

Global peers

	Currency	08/22	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA	
											17E	18E	17E	18E	17E	18E
E&P/Shale																
Exxon Mobil	USD	77	0.5	(1.7)	(4.2)	(6.7)	(5.2)	(12.8)	(15.0)	325,155	22.4	19.4	1.8	1.8	9.5	8.6
BP	GBP	442	0.5	(0.4)	(0.9)	(6.7)	(1.2)	3.3	(13.2)	112,149	20.1	15.2	1.2	1.2	5.8	5.3
Shell	EUR	2,122	0.6	(0.2)	2.0	0.6	1.8	11.6	(5.4)	226,291	15.7	13.8	1.2	1.2	6.2	5.7
Chevron	USD	106	0.5	(2.0)	3.0	0.2	(3.6)	4.3	(9.6)	201,552	26.2	21.3	1.4	1.4	7.8	7.0
Total	EUR	43	1.5	1.6	1.7	(10.3)	(10.1)	2.3	(10.9)	127,779	12.9	11.8	1.2	1.1	6.0	5.3
Sinopec	CNY	6	(0.5)	0.3	(3.2)	0.7	0.3	21.3	10.7	104,576	14.1	12.9	1.0	0.9	4.8	4.6
Petrochina	CNY	8	(0.1)	1.0	(0.2)	4.2	(4.6)	8.0	0.8	207,811	56.0	31.2	1.2	1.2	6.8	6.5
CNOOC	CNY	11	(1.0)	2.0	0.7	(16.1)	(17.4)	(9.7)	(12.9)	51,798	16.6	12.9	0.9	0.9	4.1	3.8
Gazprom	RUB	116	0.1	(1.4)	(2.5)	(5.3)	(15.1)	(15.8)	(24.9)	46,526	4.2	3.7	0.2	0.2	3.5	3.1
Rosneft	RUB	301	(0.0)	(1.3)	(5.2)	(2.1)	(13.3)	(14.4)	(25.3)	54,039	9.3	6.5	0.8	0.7	4.9	4.1
Anadarko	USD	42	0.5	(2.2)	(4.1)	(20.8)	(35.8)	(22.1)	(39.4)	23,686	#N/A	#N/A	1.6	1.6	6.7	6.0
Petrobras	BRL	14	3.4	4.9	8.7	2.9	(12.2)	11.7	(7.3)	58,227	10.1	8.3	0.5	0.6	5.3	4.8
Lukoil	USD	2,897	1.5	0.8	1.9	3.1	(8.8)	(2.9)	(16.0)	41,550	5.8	5.2	0.6	0.6	N/A	N/A
Kinder	USD	19	1.3	(0.3)	(9.2)	(3.7)	(12.6)	(14.3)	(9.3)	47,497	29.0	26.6	1.2	1.2	11.4	10.9
Statoil	NOK	147	1.6	0.8	5.5	(4.4)	(0.6)	11.1	(7.3)	60,980	16.4	17.3	1.6	1.6	3.3	3.2
BHP	AUD	26	1.1	1.4	6.1	5.5	(2.1)	24.0	3.7	103,810	17.8	18.2	1.8	1.8	6.6	6.6
PTT E&P	THB	86	(0.9)	(0.6)	1.2	(9.5)	(9.5)	4.6	(11.2)	10,210	12.9	11.8	0.8	0.8	3.1	2.8
Petronas gas	MYR	19	0.0	(0.1)	(0.1)	(5.1)	(8.7)	(15.2)	(11.7)	8,690	21.0	19.6	3.0	2.8	11.9	11.1
Chesapeake	USD	4	0.8	(3.3)	(17.9)	(32.8)	(35.0)	(36.8)	(45.2)	3,497	5.4	4.8	#N/A	#N/A	16.7	7.1
Noble Energy	USD	23	(0.2)	(4.4)	(17.2)	(24.4)	(35.9)	(34.0)	(38.3)	11,429	#N/A	#N/A	1.2	1.2	8.0	6.6
Average		0	0.6	(0.3)	(1.7)	(6.5)	(11.5)	(3.8)	(14.4)							
PV																
WACKER	EUR	105.2	1.2	3.1	5.0	8.3	(1.8)	25.6	6.4	6,454	28.8	21.4	1.8	1.7	6.6	6.3
GCL-Poly	HKD	0.9	0.0	1.1	(2.2)	2.2	(16.5)	(20.9)	(2.2)	2,161	7.4	7.0	0.6	0.6	5.7	5.2
SunPower	USD	8.9	0.8	(9.1)	(17.9)	15.3	5.3	(12.7)	34.8	1,243	#N/A	#N/A	1.7	1.8	40.5	13.4
Canadian Solar	USD	15.1	0.5	(11.0)	(9.2)	15.8	7.0	12.7	23.7	874	11.4	7.2	0.9	0.8	9.5	8.9
JA Solar	USD	6.2	0.5	1.1	(4.0)	(13.6)	19.6	(19.3)	30.7	296	#N/A	#N/A	1.5	1.5	4.2	3.0
Yingli	USD	2.6	2.0	12.8	4.5	12.8	(6.9)	(40.7)	(1.9)	46	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
First Solar	USD	46.6	1.4	(5.1)	3.2	27.9	38.8	23.6	45.2	4,865	22.5	42.2	0.9	0.9	8.1	9.1
한화큐셀	USD	7.2	3.1	(6.0)	(21.4)	4.9	(23.7)	(46.3)	(11.2)	603	50.0	51.8	#N/A	#N/A	7.4	7.4
OCI	KRW	94,400	0.6	3.3	7.9	6.7	(1.2)	3.7	19.9	1,988	15.3	20.6	0.7	0.7	7.7	7.2
웅진에너지	KRW	8,690	5.1	8.0	(1.5)	47.3	85.7	2.8	83.5	191	N/A	0.7	0.7	7.7	7.2	9.3
신성솔라에너지	KRW	2,190	1.4	1.6	(2.0)	7.4	13.5	(2.0)	(0.9)	335	N/A	0.7	7.7	7.2	9.3	8.0
Average			1.5	(0.0)	(3.4)	12.3	10.9	(6.7)	20.7							
Gas Company																
Towngas China	HKD	5.2	2.0	(0.6)	(6.8)	10.2	21.3	13.6	27.2	1,836	11.9	11.0	1.0	0.9	11.3	10.4
Kulun	HKD	7.5	1.2	0.9	(2.0)	6.2	9.8	28.4	30.0	7,777	12.1	11.2	1.4	1.3	5.8	5.6
Beijing Enterprise	HKD	40.6	1.4	2.1	(1.1)	9.7	(0.5)	(11.8)	10.6	6,539	7.9	7.5	0.8	0.7	13.5	13.1
ENN Energy	HKD	49.8	0.1	(3.5)	(4.1)	21.6	26.9	18.9	56.0	6,876	13.4	11.9	2.6	2.2	8.6	7.7
China Resources Gas	HKD	27.3	0.9	(6.7)	(8.2)	12.4	12.8	2.8	25.0	7,743	15.5	13.8	2.9	2.5	9.3	8.4
China Gas Holdings	HKD	18.8	1.3	(1.4)	0.6	60.3	62.6	43.2	78.3	11,909	17.2	14.6	3.7	3.1	13.7	11.9
Shenzen Gas	HKD	14.3	1.4	3.3	5.4	13.5	25.6	22.0	26.7	3,699	12.1	11.4	1.3	1.3	7.7	7.3
Shann Xi	CNY	8.7	(0.6)	0.6	(0.2)	2.2	(10.8)	(18.8)	(9.8)	1,444	18.3	16.4	1.7	1.6	#N/A	#N/A
Suntien	HKD	1.8	(0.6)	(3.3)	4.1	16.4	32.1	52.6	77.0	840	7.2	6.2	0.7	0.6	9.1	7.8
China Oil & Gas	HKD	0.5	0.0	(5.6)	(7.3)	(10.5)	(17.7)	(15.0)	(16.4)	380	8.8	7.6	0.8	0.8	5.8	5.2
Average			0.7	(1.4)	(1.9)	14.2	16.2	13.6	30.5							
EV																
LG화학	KRW	363,000	4.0	5.7	10.3	26.5	29.9	35.2	39.1	22,632	13.5	13.3	1.8	1.6	6.4	6.2
삼성SDI	KRW	185,500	3.9	5.1	2.5	18.5	50.8	49.6	70.2	11,266	19.5	12.7	1.2	1.1	22.1	13.9
Panasonic	JPY	1457.5	(0.5)	(2.4)	(2.7)	6.5	15.8	40.2	22.5	32,663	19.0	14.6	2.0	1.8	6.1	5.3
GS Yuasa	JPY	539.0	1.1	(1.8)	5.7	8.5	4.3	32.4	10.9	2,037	16.6	15.7	1.3	1.2	7.4	7.0
NEC	JPY	295.0	0.0	(1.3)	(1.0)	6.5	3.5	15.2	(4.8)	7,020	18.8	16.6	0.9	0.9	7.0	6.2
BYD Auto	CNY	48.2	(1.0)	0.3	(4.6)	(0.5)	(3.6)	(17.9)	(3.1)	18,744	24.9	17.3	2.4	2.2	13.3	10.8
Tesla Motors	USD	341.4	1.0	(5.8)	3.9	10.0	24.8	53.1	59.7	56,967	#N/A	#N/A	11.4	9.9	72.6	25.5
Kandi Technologies	USD	3.6	(2.7)	(2.7)	(13.9)	(15.5)	(16.5)	(43.4)	(27.6)	170	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Average			0.7	(0.4)	0.0	7.6	13.6	20.6	20.9							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임