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1. News Summary (3 page)

2018년 9월 3일

News		Conclusion
WTI comment	무역 긴장감 고조에 하락	
Headline	[주간가격] 에틸렌, WoW $40/mt 하락해 CFR SEA $1,230/mt로 마감	동남아시아 PE 역마진은 가동률을 낮춰 에틸렌 가격 하락 압력 받을 것
News 1.	[주간가격] MEG, WoW $38/mt 상승해 CFR China $977/mt로 마감	국경절 리스탁킹 모멘텀으로 추가적인 상승도 가능할 것으로 판단됨
News 2.	[주간가격] BD, WoW $20/mt 하락해 FOB Korea $1,730/mt로 마감	역내 공급이 늘어나지만 국경절 리스탁킹 모멘텀이 강세로 이끌 전망임
News 3.	[주간가격] SBR, WoW 보합하며 CFR SEA $1,875/mt로 마감	천연고무 가격과의 이격이 있지만 BD 상승 전망으로 강세 전망됨
News 4.	[주간가격] PX, WoW $125/mt 상승해 FOB Korea $1,351.67/mt로 마감	아시아 역내 PX 설비 재가동이 10월부터이므로 강세 지속될 전망

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	69.8	(0.6)	1.6	1.5	6.1	47.6
Dubai	$/bbl	75.9	0.1	2.5	2.9	1.0	54.0
Gasoline	$/bbl	88.3	0.6	2.5	3.8	0.4	26.4
Diesel	$/bbl	91.8	(0.2)	2.0	5.9	2.7	42.9
Complex margin	$/bbl	7.8	(0.1)	(0.2)	0.5	0.2	(3.1)
1M lagging	$/bbl	10.0	(0.3)	(0.4)	4.1	(2.7)	1.0
Petrochemical			%	%	%	%	%
Naphtha	$/t	680	0.1	3.1	1.0	1.6	43.7
Butadiene	$/t	1,730	(0.6)	(1.1)	3.6	(0.3)	27.2
HDPE	$/t	1,290	0.0	0.0	(1.1)	(5.5)	10.3
MEG	$/t	977	2.6	4.0	4.8	8.0	5.4
PX	$/t	1,352	(0.0)	10.2	27.0	39.0	66.5
SM	$/t	1,422	0.7	1.9	3.2	(0.5)	5.0
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	2.92	1.5	0.1	1.9	(1.5)	(1.1)
Natural rubber	$/t	1,330	0.0	(1.5)	2.3	(5.0)	(13.1)
Cotton	C/lbs	82.3	(0.1)	0.6	(7.2)	(11.8)	13.5

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	08/27	$/t	1,255	(1.6)	1.8	6.8	5.9
Propylene	08/27	$/t	1,043	(0.5)	4.8	1.0	32.0
Benzene	08/27	$/t	888	(0.3)	4.7	3.8	11.6
Toluene	08/27	$/t	815	(0.6)	1.9	(1.2)	24.4
Xylene	08/27	$/t	860	1.8	4.6	3.0	37.1
PP	08/27	$/t	1,233	0.0	0.0	(5.0)	10.3
PVC	08/27	$/t	950	0.0	0.5	3.3	3.3
ABS	08/27	$/t	1,920	(2.0)	(1.0)	(7.7)	1.3
SBR	08/27	$/t	1,875	0.0	6.5	(0.8)	13.6
SM	08/27	$/t	1,440	(2.0)	3.2	0.0	15.9
BPA	08/27	$/t	1,905	1.9	6.9	9.6	(4.4)
Caustic	08/27	$/t	421	0.0	16.6	(24.8)	(10.6)
2-EH	08/27	$/t	1,130	0.0	3.2	(4.2)	14.1
Caprolactam	08/27	$/t	2,160	0.2	0.2	2.9	22.0
Solar				%	%	%	%
Polysilicon	08/29	$/kg	11.3	(0.3)	3.2	(23.1)	(30.5)
Module	08/29	$/W	0.25	(0.8)	(2.0)	(14.4)	(22.6)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	80.2	(0.4)	0.7	(1.6)	(1.3)	5.0
Shell	EUR	2,502	(1.8)	(2.4)	(4.3)	(4.0)	17.6
Petrochina	CNY	8.04	(1.3)	(1.1)	4.0	0.8	(0.9)
Gazprom	RUB	150.0	2.7	4.4	4.3	3.4	27.1
Petrobras	BRL	19.3	2.4	5.2	(2.3)	1.5	41.1
Refinery							
Phillips66	USD	118.5	(0.9)	(0.6)	(3.9)	1.7	41.4
Valero	USD	117.9	(1.0)	(2.2)	(0.4)	(2.7)	73.1
JX	JPY	782.4	(2.2)	0.6	(4.5)	11.3	47.0
Neste Oil	EUR	74.8	(0.2)	0.4	5.9	7.4	101.9

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	79.6	(1.0)	(0.1)	(3.0)	(5.9)	(2.3)
DowDuPont	USD	70.1	(0.1)	1.3	2.0	9.4	5.2
SABIC	SAR	126.0	0.0	2.4	(2.2)	(3.4)	27.4
Formosa Pla.	TWD	112.5	0.4	0.0	0.0	4.7	19.8
Shin-Etsu	JPY	10,425	(1.6)	(1.6)	(7.5)	(4.3)	7.2
Renewable							
Wacker	EUR	124.3	(1.6)	(1.2)	(0.2)	(10.6)	15.4
First Solar	USD	52.08	(0.2)	0.0	(0.5)	(23.0)	10.9
GCL-Poly	HKD	0.53	1.9	0.0	(23.2)	(38.4)	(39.8)
Tesla Motors	USD	301.7	(0.5)	(6.6)	1.2	5.9	(15.2)

4. Coverage Summary

	08/31	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	2,323	0.7	1.3	0.7	(4.8)	(4.3)	(2.1)				* 추정치는 12M fwd 기준임	
KOSPI화학	5,625	0.0	0.3	(1.6)	(5.0)	(7.4)	(3.7)				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	366,000	0.7	0.0	(2.3)	8.6	(4.4)	(3.7)	매수	400,000	9.3	14.46	1.63
롯데케미칼	316,000	(0.2)	1.4	(6.6)	(12.9)	(31.2)	(19.8)	매수	400,000	26.6	9.81	0.89
한화케미칼	20,250	(3.1)	3.3	(3.6)	(21.7)	(39.0)	(42.1)	매수	30,000	48.1	9.10	0.49
금호석유화학	102,000	1.5	(0.5)	(3.3)	(4.2)	12.6	28.1	매수	150,000	47.1	9.51	1.32
KCC	324,500	0.2	(2.7)	(4.0)	(7.4)	(10.5)	(18.1)	매수	400,000	23.3	28.13	0.50
OCI	115,500	0.0	5.5	12.1	(11.8)	(29.8)	22.1	매수	140,000	21.2	8.78	0.84
SKC	47,050	0.1	2.8	7.7	20.8	19.9	27.9	매수	50,000	6.3	12.83	1.12
SK이노베이션	193,000	0.5	(2.3)	(1.8)	(5.2)	(6.1)	3.8	매수	230,000	19.2	11.35	0.97
S-Oil	119,500	(0.8)	(2.8)	2.6	10.6	(3.2)	(6.3)	매수	140,000	17.2	13.64	2.00
GS	53,100	(0.6)	(0.9)	(0.7)	(8.1)	(19.7)	(24.0)	매수	80,000	50.7	4.92	0.60
SK가스	85,200	0.2	1.3	(1.4)	(14.5)	(9.6)	(23.9)	매수	130,000	52.6	8.05	0.57
포스코대우	18,250	2.0	2.5	(3.7)	(21.8)	(9.7)	(15.1)	매수	25,000	37.0	9.57	0.71
LG상사	21,300	(1.4)	(4.3)	(9.7)	(19.5)	(21.5)	(25.7)	매수	38,000	78.4	7.89	0.60
한국전력	30,500	(0.2)	(0.8)	(5.7)	(7.3)	(7.9)	(30.6)	매수	45,000	47.5	7.38	0.24
한국가스공사	52,600	(0.4)	(2.4)	(11.0)	(15.8)	14.6	16.2	매수	75,000	42.6	8.16	0.68

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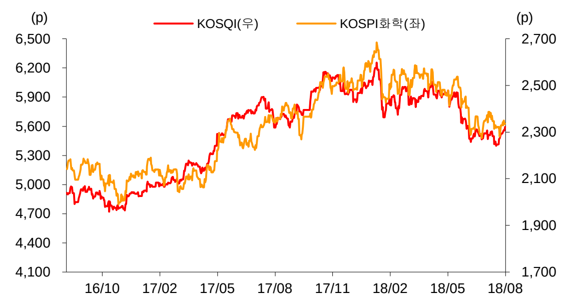
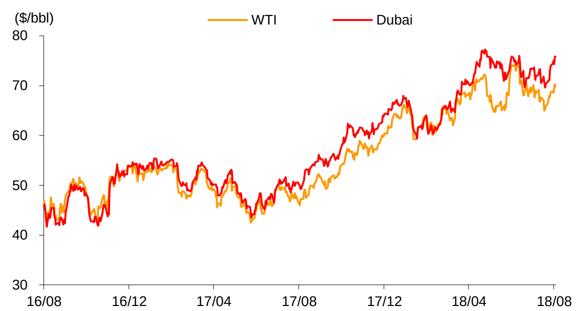
Key Chart

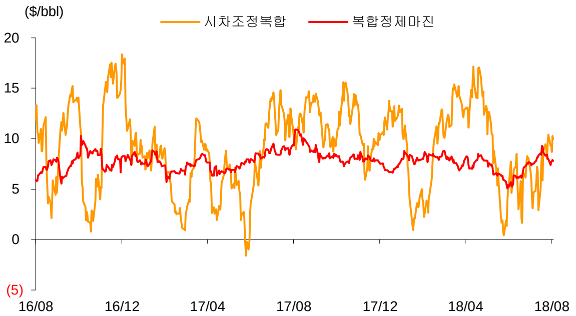
KOSPI/KOSPI화학



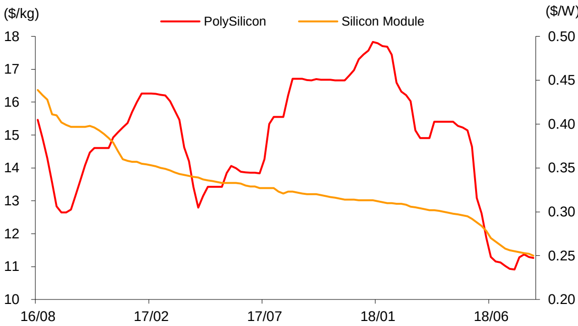
WTI/Dubai



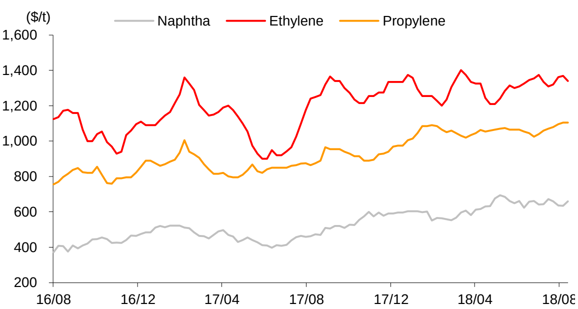
Complex & 1M lagging margin



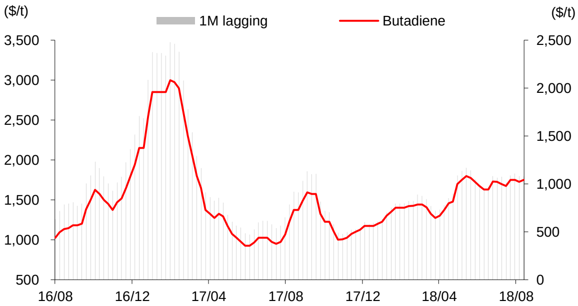
Polysilicon & Module prices



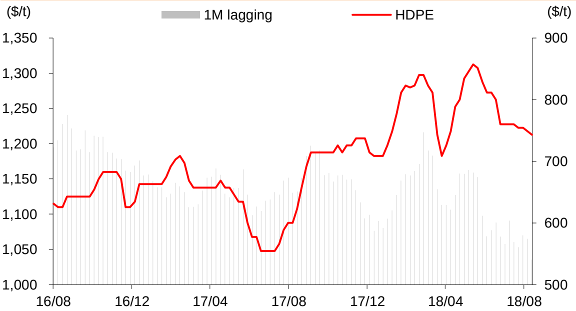
Naphtha/Ethylene/Propylene prices



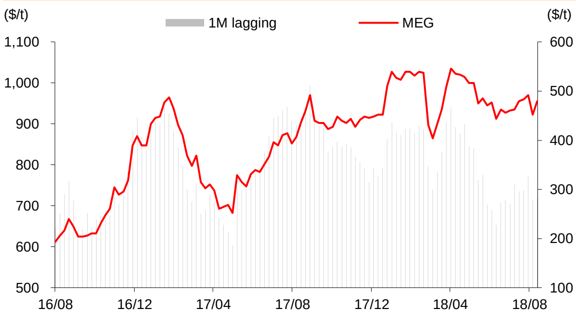
Butadiene price & 1M lagging naphtha spread



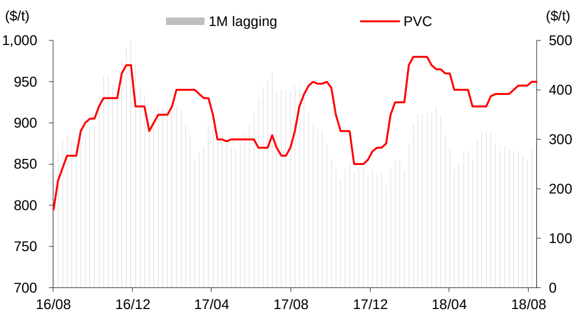
HDPE price & 1M lagging naphtha spread



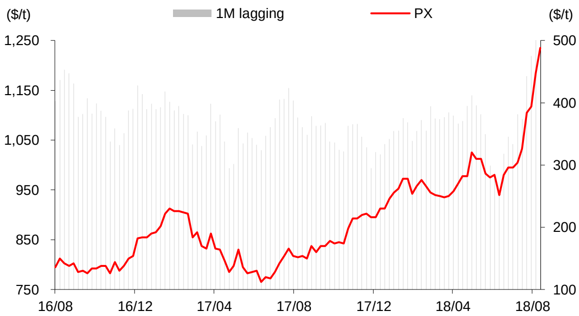
MEG price & 1M lagging naphtha spread



PVC price & 1M lagging naphtha spread



PX price & 1M lagging naphtha spread



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

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News Comment

Headline	(출처: Platts)
제목	[주간가격] 에틸렌, WoW $40/mt 하락해 CFR SEA $1,230/mt로 마감
결론	동남아시아 PE 역마진은 가동률을 낮춰 에틸렌 가격 하락 압력 받을 것
세부	
	1) 대만, 태국, 싱가폴에서의 스팟 공급 증가로 아시아 가격 약세 시현함
	2) 아시아 PE가 역마진 구간에 머묾에 따라 PE 공장 가동률이 낮았음
	3) 그리고 사우디아라비아로부터 9천톤의 스팟 카고 공급 증가가 있었음
	4) 일각에서는 10월과 11월 예정된 정기보수에 대비한 스팟 카고 물색중
	5) 동남아시아 PE 역마진은 가동률을 낮춰 에틸렌 가격 하락 압력 받을 것

WTI Comment	(출처: 뉴스핌)
제목	무역 긴장감 고조에 하락
상승 요인	
하락 요인	트럼프가 $2,000억 규모 중국산 재화에 관세 부과를 지지함 EIA, "지난 6월 美 산유량은 1,067만4,000b/d로 사상 최대치 기록"

Issue 1	(출처: Platts)
제목	[주간가격] MEG, WoW $38/mt 상승해 CFR China $977/mt로 마감
결론	국경절 리스탁킹 모멘텀으로 추가적인 상승도 가능할 것으로 판단됨
세부	
	1) Dalian 원자재 시장의 선물 계약이 시작된다는 소식에 센티가 좋아짐
	2) 트레이더, "현재 공급은 타이트한 상황인데 곧 수급이 맞아질 것임"
	3) 트레이더, "중국 내에 신규 CTM 플랜트들이 진입하며 수급 맞아질 것"
	4) 현재 다운스트림인 폴리에스터는 마진이 적어 수요가 낮아진 상황임
	5) 국경절 리스탁킹 모멘텀으로 추가적인 상승도 가능할 것으로 판단됨

Issue 2	(출처: Platts)
제목	[주간가격] BD, WoW $20/mt 하락해 FOB Korea $1,730/mt로 마감
결론	역내 공급이 늘어나지만 국경절 리스탁킹 모멘텀이 강세로 이끌 전망임
세부	
	1) 아시아 BD는 9월물 수요는 낮은데 공급은 많아 가격이 하락함
	2) 대부분의 바이어들은 가격 하락을 예상하기에 10월물 매수 문의도 적음
	3) 브라질로부터의 deepsea 물량이 10월에 유입될 것으로 예상되고 있음
	4) 중국 공장들도 정기보수를 마치고 공급을 늘리고 있는 상황임
	5) 역내 공급이 늘어나지만 국경절 리스탁킹 모멘텀이 강세로 이끌 전망임

Issue 3	(출처: Platts)
제목	[주간가격] SBR, WoW 보합하며 CFR SEA $1,875/mt로 마감
결론	천연고무 가격과의 이격이 있지만 BD 상승 전망으로 강세 전망됨
세부	
	1) 원재료인 BD 가격이 강세를 보이면서 아시아 SBR 수요가 약세를 보임
	2) 게다가 다수의 SBR 공장들이 마진이 낮아 가동률도 낮춘 상황임
	3) 천연고무의 가격이 SBR 대비 $300/mt 싸게 거래되며 거래량도 줄어듦
	4) 관계자, "따라서 엔드 유저들은 천연가스의 투입 비율을 높이고 있음"
	5) 천연고무 가격과의 이격이 있지만 BD 상승 전망으로 강세 전망됨

Issue 4	(출처: Platts)
제목	[주간가격] PX, WoW $125/mt 상승해 FOB Korea $1,351.67/mt로 마감
결론	아시아 역내 PX 설비 재가동이 10월부터이므로 강세 지속될 전망
세부	
	1) 아시아 PX 가격 상승은 10월 카고 프리미엄이 $75/mt에 달할 정도임
	2) 한편, PX의 CFR Asia 기준 ACP는 $1,340/mt로 크게 조정되었음
	3) 업스트림에서는 유가 상승으로 납사 가격이 3개월 최고치로 상승했음
	4) 지난 2주간 납사와 PX 스프레드가 커지며 최고치인 $691.705/mt 기록
	5) 아시아 역내 PX 설비 재가동이 10월부터이므로 강세 지속될 전망

Issue 5	(출처: Platts)
제목	[주간가격] PTA, WoW $75/mt 상승해 CFR China $1,065/mt로 마감
결론	정기보수 종료때까지 공급 부족, PX 강세가 겹쳐 가격 상승 압력 전망
세부	
	1) 중국 내수 가격은 Yuan 450/mt 상승해 Yuan 9,250/mt 수준 기록함
	2) 관계자, "PTA는 스팟 공급이 줄어들며 수급이 매우 타이트한 상황임"
	3) 따라서 PTA 가격이 올랐고 이는 폴리에스터 생산자들 마진을 압박함
	4) 따라서 폴리에스터 생산자들은 전반적으로 가동률을 2~3% 낮췄음
	5) 정기보수 종료때까지 공급 부족, PX 강세가 겹쳐 가격 상승 압력 전망

Issue 6	(출처: PVinsights)
제목	[주간가격] 태양광 제품, EU MIP 만료로 셀과 모듈 가격 영향받음
결론	수요 부진 우려가 재차 부각되며 제품별로 하락세를 면치 못할 전망
세부	
	1) 폴리실리콘이 multi-grade 수요 약세와 정기보수 종료로 하락
	2) Multi-crystalline wafer는 글로벌 공급 과잉 전망 속에 센티가 약화됨
	3) Multi-crystalline cell은 mono PERC cell 증가 전망으로 다시 신저가 기록
	4) 모듈 가격은 수요 약세와 EU의 MIP 만료로 유럽 모듈 가격부터 하락함
	5) 수요 부진 우려가 재차 부각되며 제품별로 하락세를 면치 못할 전망

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Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
F/X	**USD/EUR**	0.862	0.857	0.861	0.855	0.855	0.812	0.840	0.833	0.904	0.887	0.836
	Change, %		*0.6*	*0.2*	*0.8*	*0.8*	*6.2*	*2.7*	*3.5*	*(4.6)*	*(2.8)*	*3.2*
	USD/JPY	111.0	111.0	111.2	111.9	108.8	105.8	110.0	112.6	108.8	112.1	109.4
	Change, %		*0.0*	*(0.2)*	*(0.7)*	*2.0*	*5.0*	*1.0*	*(1.4)*	*2.1*	*(1.0)*	*1.5*
	USD/KRW	1,113.1	1,108.7	1,118.9	1,118.7	1,077.2	1,080.5	1,127.6	1,066.7	1,160.5	1,130.9	1,088.0
	Change, %		*0.4*	*(0.5)*	*(0.5)*	*3.3*	*3.0*	*(1.3)*	*4.3*	*(4.1)*	*(1.6)*	*2.3*
Agriculture	**Corn**	351.0	341.0	348.5	372.3	394.0	377.3	342.3	350.8	358.5	359.4	369.4
	Change, %		*2.9*	*0.7*	*(5.7)*	*(10.9)*	*(7.0)*	*2.6*	*0.1*	*(2.1)*	*(2.3)*	*(5.0)*
	Soybean	833.0	819.5	842.0	903.8	1,018.5	1,060.8	936.3	951.8	987.5	975.9	963.1
	Change, %		*1.6*	*(1.1)*	*(7.8)*	*(18.2)*	*(21.5)*	*(11.0)*	*(12.5)*	*(15.6)*	*(14.6)*	*(13.5)*
	Wheat	518.5	508.0	514.8	553.8	526.3	492.0	410.3	427.0	436.4	436.0	488.4
	Change, %		*2.1*	*0.7*	*(6.4)*	*(1.5)*	*5.4*	*26.4*	*21.4*	*18.8*	*18.9*	*6.2*
	Rice	10.8	10.7	10.8	11.9	11.6	12.3	12.6	11.7	10.3	11.1	12.0
	Change, %		*1.5*	*0.4*	*(9.1)*	*(6.3)*	*(11.7)*	*(13.7)*	*(7.3)*	*4.7*	*(2.1)*	*(9.8)*
	Oats	243.5	239.5	259.5	235.8	244.8	265.0	223.5	241.0	196.3	252.3	246.4
	Change, %		*1.7*	*(6.2)*	*3.3*	*(0.5)*	*(8.1)*	*8.9*	*1.0*	*24.1*	*(3.5)*	*(1.2)*
MYR/mt	**Palm Oil**	2,200.0	2,200.0	2,178.0	2,132.0	2,427.0	2,496.0	2,680.0	2,444.0	2,653.8	2,787.3	2,365.5
	Change, %		*0.0*	*1.0*	*3.2*	*(9.4)*	*(11.9)*	*(17.9)*	*(10.0)*	*(17.1)*	*(21.1)*	*(7.0)*
	Cocoa	2,323.0	2,262.0	2,374.0	2,170.0	2,454.0	2,320.0	1,966.0	1,892.0	2,854.0	2,005.2	2,362.7
	Change, %		*2.7*	*(2.1)*	*7.1*	*(5.3)*	*0.1*	*18.2*	*22.8*	*(18.6)*	*15.8*	*(1.7)*
	Cotton	82.3	82.4	81.8	90.3	93.2	82.7	71.5	78.6	65.6	73.5	84.2
	Change, %		*(0.1)*	*0.6*	*(8.8)*	*(11.6)*	*(0.5)*	*15.2*	*4.7*	*25.5*	*11.9*	*(2.2)*
	Sugar	10.6	10.6	10.2	10.6	12.8	13.4	14.4	15.2	18.2	15.8	12.2
	Change, %		*0.3*	*3.6*	*0.5*	*(17.1)*	*(21.0)*	*(26.4)*	*(30.1)*	*(41.6)*	*(33.0)*	*(13.1)*
	Coffee	98.1	99.0	100.6	109.9	123.7	120.4	128.2	126.2	136.1	133.0	115.7
	Change, %		*(0.9)*	*(2.4)*	*(10.7)*	*(20.7)*	*(18.5)*	*(23.4)*	*(22.3)*	*(27.9)*	*(26.2)*	*(15.2)*
Energy	**WTI**	69.8	70.3	68.7	68.8	67.0	61.3	47.2	60.4	43.4	51.0	66.5
	Change, %		*(0.6)*	*1.6*	*1.5*	*4.1*	*14.0*	*47.8*	*15.5*	*60.9*	*37.0*	*5.0*
	Brent	77.4	77.8	75.8	74.3	77.6	64.4	52.4	66.9	45.1	54.9	72.0
	Change, %		*(0.5)*	*2.1*	*4.3*	*(0.2)*	*20.3*	*47.8*	*15.8*	*71.7*	*41.1*	*7.5*
	Natural Gas	2.9	2.9	2.9	2.8	3.0	2.7	3.0	3.0	2.6	3.0	2.8
	Change, %		*1.5*	*(0.0)*	*4.8*	*(1.2)*	*8.2*	*(4.1)*	*(1.3)*	*14.3*	*(3.5)*	*2.6*
	Ethanol	1.3	1.2	1.3	1.5	1.5	1.5	1.5	1.3	1.5	1.5	1.4
	Change, %		*3.9*	*(2.5)*	*(11.7)*	*(12.4)*	*(12.2)*	*(17.3)*	*(3.0)*	*(15.5)*	*(14.5)*	*(10.2)*
	RBOB Gasoline	214.4	214.4	207.8	212.9	216.0	190.1	214.0	179.9	140.0	162.9	201.2
	Change, %		*0.0*	*3.2*	*0.7*	*(0.8)*	*12.7*	*0.2*	*19.1*	*53.1*	*31.6*	*6.6*
	Coal	118.0	117.5	117.9	117.6	110.2	102.9	95.3	100.8	65.5	88.2	107.0
	Change, %		*0.4*	*0.1*	*0.4*	*7.1*	*14.7*	*23.8*	*17.1*	*80.3*	*33.8*	*10.3*
Metal	**Gold**	1,201.4	1,200.0	1,205.9	1,224.1	1,298.5	1,322.8	1,321.4	1,302.6	1,248.5	1,258.6	1,292.3
	Change, %		*0.1*	*(0.4)*	*(1.9)*	*(7.5)*	*(9.2)*	*(9.1)*	*(7.8)*	*(3.8)*	*(4.5)*	*(7.0)*
	Silver	14.5	14.5	14.8	15.5	16.4	16.5	17.6	16.9	17.1	17.1	16.3
	Change, %		*(0.0)*	*(1.9)*	*(6.3)*	*(11.4)*	*(12.0)*	*(17.4)*	*(14.2)*	*(15.0)*	*(14.8)*	*(10.8)*
	Copper	5,975.0	6,066.0	6,105.0	6,300.0	6,852.0	6,898.0	6,788.0	7,247.0	4,872.0	6,199.4	6,742.8
	Change, %		*(1.5)*	*(2.1)*	*(5.2)*	*(12.8)*	*(13.4)*	*(12.0)*	*(17.6)*	*22.6*	*(3.6)*	*(11.4)*
	Nickel	919.9	938.4	933.7	945.1	1,020.2	879.9	743.4	809.1	646.4	680.2	921.5
	Change, %		*(2.0)*	*(1.5)*	*(2.7)*	*(9.8)*	*4.5*	*23.7*	*13.7*	*42.3*	*35.2*	*(0.2)*
	Zinc	2,457.0	2,467.5	2,534.0	2,625.0	3,100.0	3,355.0	3,146.0	3,319.0	2,097.5	2,888.5	3,067.1
	Change, %		*(0.4)*	*(3.0)*	*(6.4)*	*(20.7)*	*(26.8)*	*(21.9)*	*(26.0)*	*17.1*	*(14.9)*	*(19.9)*
	Lead	2,064.5	2,059.3	2,079.0	2,146.8	2,455.0	2,447.3	2,371.5	2,482.8	1,868.3	2,315.7	2,369.4
	Change, %		*0.3*	*(0.7)*	*(3.8)*	*(15.9)*	*(15.6)*	*(12.9)*	*(16.8)*	*10.5*	*(10.8)*	*(12.9)*
	Aluminum	14,825.0	14,890.0	14,680.0	14,425.0	14,600.0	14,300.0	16,325.0	15,020.0	12,373.5	14,556.6	14,362.4
	Change, %		*(0.4)*	*1.0*	*2.8*	*1.5*	*3.7*	*(9.2)*	*(1.3)*	*19.8*	*1.8*	*3.2*
	Cobalt	64,306.0	65,056.0	63,806.0	69,000.0	90,000.0	79,250.0	60,750.0	75,205.0	25,480.1	55,906.9	80,127.3
	Change, %		*(1.2)*	*0.8*	*(6.8)*	*(28.5)*	*(18.9)*	*5.9*	*(14.5)*	*152.4*	*15.0*	*(19.7)*
	HR Coil	865.0	861.0	901.0	895.0	920.0	836.0	634.0	662.0	519.3	620.1	837.7
	Change, %		*0.5*	*(4.0)*	*(3.4)*	*(6.0)*	*3.5*	*36.4*	*30.7*	*66.6*	*39.5*	*3.3*
	Scrap	376.0	376.0	376.0	393.0	400.0	389.0	372.0	367.0	275.7	344.7	388.7
	Change, %		*0.0*	*0.0*	*(4.3)*	*(6.0)*	*(3.3)*	*1.1*	*2.5*	*36.4*	*9.1*	*(3.3)*

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

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Refining Price Data

Daily Price		08/31	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	**WTI**	69.8	70.3	68.7	68.8	65.8	61.3	47.3	53.7	43.4	50.9	66.4
	Change, %		*(0.6)*	*1.6*	*1.5*	*6.1*	*14.0*	*47.6*	*29.9*	*61.0*	*37.1*	*5.1*
	Dubai	75.9	75.8	74.0	73.7	75.1	60.3	49.3	53.8	41.3	53.1	69.3
	Change, %		*0.1*	*2.5*	*2.9*	*1.0*	*25.8*	*54.0*	*40.9*	*83.6*	*42.9*	*9.4*
Crude Oil Product	**Gasoline(휘발유)**	88.3	87.8	86.1	85.0	88.0	75.2	69.8	69.8	56.3	68.0	81.8
	Change, %		*0.6*	*2.5*	*3.8*	*0.4*	*17.3*	*26.4*	*26.4*	*56.9*	*29.8*	*7.9*
	Kerosene(등유)	90.3	90.5	88.8	88.3	89.6	79.5	64.3	66.4	52.9	65.2	84.6
	Change, %		*(0.2)*	*1.7*	*2.3*	*0.8*	*13.6*	*40.4*	*36.0*	*70.8*	*38.5*	*6.7*
	Diesel(경유)	91.8	91.9	90.0	86.7	89.4	74.9	64.2	65.5	52.1	65.6	83.8
	Change, %		*(0.2)*	*2.0*	*5.9*	*2.7*	*22.5*	*42.9*	*40.1*	*76.1*	*39.9*	*9.5*
	Bunker-C	70.2	70.6	69.4	71.5	70.6	55.4	46.9	52.1	35.5	49.7	63.9
	Change, %		*(0.6)*	*1.0*	*(1.9)*	*(0.7)*	*26.5*	*49.5*	*34.7*	*97.5*	*41.3*	*9.7*
	Naphtha	74.1	74.1	71.7	74.0	74.0	60.8	50.7	53.5	42.6	53.7	68.4
	Change, %		*0.1*	*3.4*	*0.2*	*0.2*	*22.0*	*46.1*	*38.7*	*74.1*	*38.0*	*8.4*
Dubai Spread	**Gasoline(휘발유)**	12.4	12.0	12.1	11.3	12.8	15.0	20.6	16.0	14.9	14.9	12.5
	Change		*0.4*	*0.3*	*1.1*	*(0.4)*	*(2.5)*	*(8.1)*	*(3.6)*	*(2.5)*	*(2.5)*	*(0.1)*
	Kerosene(등유)	14.5	14.7	14.8	14.6	14.5	19.2	15.1	12.6	11.6	12.1	15.3
	Change		*(0.3)*	*(0.3)*	*(0.1)*	*0.0*	*(4.7)*	*(0.6)*	*1.9*	*2.9*	*2.3*	*(0.9)*
	Diesel(경유)	15.9	16.2	16.0	13.0	14.3	14.6	15.0	11.7	10.8	12.5	14.5
	Change		*(0.3)*	*(0.1)*	*2.9*	*1.7*	*1.3*	*1.0*	*4.2*	*5.1*	*3.4*	*1.5*
	Bunker-C	(5.7)	(5.2)	(4.6)	(2.2)	(4.5)	(4.8)	(2.3)	(1.8)	(5.8)	(3.4)	(5.4)
	Change		*(0.5)*	*(1.1)*	*(3.5)*	*(1.2)*	*(0.9)*	*(3.4)*	*(3.9)*	*0.1*	*(2.3)*	*(0.3)*
	Naphtha	(1.7)	(1.7)	(2.3)	0.3	(1.1)	0.5	1.5	(0.4)	1.3	0.6	(0.9)
	Change		*(0.0)*	*0.6*	*(2.0)*	*(0.6)*	*(2.2)*	*(3.2)*	*(1.3)*	*(3.0)*	*(2.4)*	*(0.8)*
Refining Margin	**Simple(단순)**	2.2	2.4	2.7	3.1	2.4	3.5	5.4	3.8	1.9	3.2	2.3
	Change		*(0.3)*	*(0.6)*	*(1.0)*	*(0.3)*	*(1.4)*	*(3.2)*	*(1.6)*	*0.3*	*(1.0)*	*(0.1)*
	Complex(복합)	7.8	7.9	8.0	7.3	7.6	8.7	10.9	8.3	7.0	8.0	7.5
	Change		*(0.1)*	*(0.2)*	*0.5*	*0.2*	*(0.9)*	*(3.1)*	*(0.5)*	*0.8*	*(0.2)*	*0.3*
	Complex(lagging)	10.0	10.3	10.4	5.8	12.6	2.6	8.9	18.0	8.5	8.9	8.5
	Change		*(0.3)*	*(0.4)*	*4.1*	*(2.7)*	*7.4*	*1.0*	*(8.0)*	*1.5*	*1.0*	*1.5*

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

SK Energy Daily

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Petrochemical Price Data

Daily Price			08/31	08/30	08/29	08/28	08/27	08/24	08/23	08/22	08/21	08/20
Spot Price	**Naphtha**	CFR Japan	680.1	679.6	666.5	667.0	659.5	660.0	655.6	643.0	643.0	639.0
	Ethylene	CFR SE Asia	1,230.0	1,240.0	1,270.0	1,270.0	1,270.0	1,270.0	1,270.0	1,260.0	1,260.0	1,260.0
	Propylene	FOB Korea	1,090.0	1,090.0	1,090.0	1,090.0	1,095.0	1,095.0	1,100.0	1,100.0	1,100.0	1,100.0
	Butadiene	FOB Korea	1,730.0	1,740.0	1,740.0	1,740.0	1,750.0	1,750.0	1,750.0	1,715.0	1,715.0	1,715.0
	HDPE	CFR FE Asia	1,290.0	1,290.0	1,290.0	1,290.0	1,290.0	1,290.0	1,290.0	1,290.0	1,290.0	1,300.0
	LDPE	CFR FE Asia	1,120.0	1,120.0	1,120.0	1,120.0	1,120.0	1,120.0	1,130.0	1,130.0	1,130.0	1,140.0
	LLDPE	CFR FE Asia	1,100.0	1,100.0	1,100.0	1,100.0	1,100.0	1,100.0	1,100.0	1,100.0	1,100.0	1,120.0
	MEG	CFR China	977.0	952.0	940.0	940.0	935.0	939.0	936.0	933.0	933.0	925.0
	PP	CFR FE Asia	1,210.0	1,210.0	1,220.0	1,210.0	1,210.0	1,210.0	1,220.0	1,230.0	1,230.0	1,220.0
	PX	CFR China	1,351.7	1,352.0	1,317.7	1,303.3	1,250.7	1,226.7	1,220.0	1,204.7	1,204.7	1,198.7
	PTA	CFR China	1,065.0	1,050.0	1,050.0	1,050.0	990.0	990.0	985.0	985.0	985.0	970.0
	Benzene	FOB Korea	877.7	881.7	881.0	882.7	883.7	887.0	881.3	877.3	877.3	877.3
	Toluene	FOB Korea	819.5	814.5	804.5	804.5	795.5	793.5	788.5	787.0	787.0	783.0
	Xylene	FOB Korea	911.5	930.5	930.5	945.5	945.5	945.5	949.5	938.0	938.0	938.0
	SM	FOB Korea	1,422.0	1,412.0	1,412.0	1,405.0	1,392.0	1,396.0	1,408.0	1,410.0	1,410.0	1,413.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	**Naphtha**	CFR Japan	659.0	634.5	672.0	684.5	631.0	474.0	484.5	399.5	493.5	622.5
	Change, %			*3.9*	*(1.9)*	*(3.7)*	*4.4*	*39.0*	*36.0*	*65.0*	*33.5*	*5.9*
	Ethylene	CFR SE Asia	1,255.0	1,275.0	1,232.5	1,175.0	1,215.0	1,185.0	990.0	1,040.9	1,090.9	1,241.0
	Change, %			*(1.6)*	*1.8*	*6.8*	*3.3*	*5.9*	*26.8*	*20.6*	*15.0*	*1.1*
	Propylene	CFR SE Asia	1,042.5	1,047.5	995.0	1,032.5	990.0	790.0	815.0	705.7	823.6	1,059.5
	Change, %			*(0.5)*	*4.8*	*1.0*	*5.3*	*32.0*	*27.9*	*47.7*	*26.6*	*(1.6)*
	Butadiene	CFR SE Asia	1,700.0	1,675.0	1,625.0	1,750.0	1,410.0	1,325.0	2,100.0	1,116.8	1,481.1	1,482.6
	Change, %			*1.5*	*4.6*	*(2.9)*	*20.6*	*28.3*	*(19.0)*	*52.2*	*14.8*	*14.7*
	Benzene	CFR SE Asia	887.5	890.0	847.5	855.0	840.0	795.0	822.5	646.7	838.8	867.9
	Change, %			*(0.3)*	*4.7*	*3.8*	*5.7*	*11.6*	*7.9*	*37.2*	*5.8*	*2.3*
	Toluene	CFR SE Asia	815.0	820.0	800.0	825.0	760.0	655.0	690.0	630.5	689.5	775.6
	Change, %			*(0.6)*	*1.9*	*(1.2)*	*7.2*	*24.4*	*18.1*	*29.3*	*18.2*	*5.1*
	Xylene	CFR SE Asia	860.0	845.0	822.5	835.0	770.0	627.5	675.0	627.7	668.8	791.5
	Change, %			*1.8*	*4.6*	*3.0*	*11.7*	*37.1*	*27.4*	*37.0*	*28.6*	*8.6*
Spread	**Ethylene**	-Naphtha	596.0	640.5	560.5	490.5	584.0	711.0	505.5	641.4	597.4	618.5
	Change, %			*(6.9)*	*6.3*	*21.5*	*2.1*	*(16.2)*	*17.9*	*(7.1)*	*(0.2)*	*(3.6)*
	Propylene	-Naphtha	383.5	413.0	323.0	348.0	359.0	316.0	330.5	306.2	330.1	437.0
	Change, %			*(7.1)*	*18.7*	*10.2*	*6.8*	*21.4*	*16.0*	*25.3*	*16.2*	*(12.2)*
	Butadiene	-Naphtha	1,041.0	1,040.5	953.0	1,065.5	779.0	851.0	1,615.5	717.3	987.6	860.2
	Change, %			*0.0*	*9.2*	*(2.3)*	*33.6*	*22.3*	*(35.6)*	*45.1*	*5.4*	*21.0*
	Benzene	-Naphtha	228.5	255.5	175.5	170.5	209.0	321.0	338.0	247.2	345.3	245.5
	Change, %			*(10.6)*	*30.2*	*34.0*	*9.3*	*(28.8)*	*(32.4)*	*(7.6)*	*(33.8)*	*(6.9)*
	Toluene	-Naphtha	156.0	185.5	128.0	140.5	129.0	181.0	205.5	231.0	196.0	153.1
	Change, %			*(15.9)*	*21.9*	*11.0*	*20.9*	*(13.8)*	*(24.1)*	*(32.5)*	*(20.4)*	*1.9*
	Xylene	-Naphtha	201.0	210.5	150.5	150.5	139.0	153.5	190.5	228.2	175.3	169.1
	Change, %			*(4.5)*	*33.6*	*33.6*	*44.6*	*30.9*	*5.5*	*(11.9)*	*14.6*	*18.9*

자료 : Cischem, Platts, Bloomberg, SK증권
참고 : Spread는 Polymer와 Naphtha의 가격차이임

SK Energy Daily

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SK 증권

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	**HDPE**	CFR SE Asia	1,212.5	1,217.5	1,227.5	1,312.5	1,252.5	1,107.5	1,142.5	1,134.6	1,142.5	1,250.8
	Change, %			(0.4)	(1.2)	(7.6)	(3.2)	9.5	6.1	6.9	6.1	(3.1)
	MEG	CFR SE Asia	955.0	922.5	955.0	950.0	1,020.0	902.5	847.5	660.8	850.6	972.4
	Change, %			3.5	0.0	0.5	(6.4)	5.8	12.7	44.5	12.3	(1.8)
	PVC	CFR SE Asia	950.0	950.0	945.0	920.0	940.0	920.0	920.0	823.4	899.9	942.9
	Change, %			0.0	0.5	3.3	1.1	3.3	3.3	15.4	5.6	0.8
	PP	CFR SE Asia	1,232.5	1,232.5	1,232.5	1,297.5	1,242.5	1,117.5	1,032.5	978.4	1,099.6	1,256.3
	Change, %			0.0	0.0	(5.0)	(0.8)	10.3	19.4	26.0	12.1	(1.9)
	2-EH	CFR Korea	1,130.0	1,130.0	1,095.0	1,180.0	1,140.0	990.0	865.0	772.4	970.0	1,116.5
	Change, %			0.0	3.2	(4.2)	(0.9)	14.1	30.6	46.3	16.5	1.2
	ABS	CFR SE Asia	1,920.0	1,960.0	1,940.0	2,080.0	1,990.0	1,895.0	1,635.0	1,347.1	1,844.7	2,011.9
	Change, %			(2.0)	(1.0)	(7.7)	(3.5)	1.3	17.4	42.5	4.1	(4.6)
	SBR	CFR SE Asia	1,875.0	1,875.0	1,760.0	1,890.0	1,700.0	1,650.0	2,000.0	1,483.0	1,980.5	1,763.5
	Change, %			0.0	6.5	(0.8)	10.3	13.6	(6.3)	26.4	(5.3)	6.3
	SM	CFR SE Asia	1,440.0	1,470.0	1,395.0	1,440.0	1,355.0	1,242.5	1,205.0	1,064.6	1,253.8	1,407.5
	Change, %			(2.0)	3.2	0.0	6.3	15.9	19.5	35.3	14.9	2.3
	Caustic	FOB NEA	421.0	421.0	361.0	560.0	598.0	471.0	422.5	316.6	491.2	537.6
	Change, %			0.0	16.6	(24.8)	(29.6)	(10.6)	(0.4)	33.0	(14.3)	(21.7)
	PX	CFR SE Asia	1,235.0	1,185.0	1,032.5	1,012.5	977.5	817.5	855.0	790.4	844.4	992.4
	Change, %			4.2	19.6	22.0	26.3	51.1	44.4	56.3	46.2	24.5
	PO	CFR China	1,905.0	1,870.0	1,782.5	1,737.5	1,935.0	1,992.5	1,562.5	1,396.8	1,601.2	1,866.3
	Change, %			1.9	6.9	9.6	(1.6)	(4.4)	21.9	36.4	19.0	2.1
	Caprolactam	CFR SE Asia	2,160.0	2,155.0	2,155.0	2,100.0	2,170.0	1,770.0	1,850.0	1,344.9	1,936.4	2,127.2
	Change, %			0.2	0.2	2.9	(0.5)	22.0	16.8	60.6	11.5	1.5
	PTA	CFR SE Asia	990.0	972.5	862.5	850.0	802.5	657.5	642.5	613.7	667.8	825.1
	Change, %			1.8	14.8	16.5	23.4	50.6	54.1	61.3	48.2	20.0
Spread	**HDPE**		553.5	583.0	555.5	628.0	621.5	633.5	658.0	735.1	649.0	628.3
	Change, %			(5.1)	(0.4)	(11.9)	(10.9)	(12.6)	(15.9)	(24.7)	(14.7)	(11.9)
	MEG		296.0	288.0	283.0	265.5	389.0	428.5	363.0	261.3	357.1	349.9
	Change, %			2.8	4.6	11.5	(23.9)	(30.9)	(18.5)	13.3	(17.1)	(15.4)
	PVC		291.0	315.5	273.0	235.5	309.0	446.0	435.5	423.9	406.4	320.4
	Change, %			(7.8)	6.6	23.6	(5.8)	(34.8)	(33.2)	(31.3)	(28.4)	(9.2)
	PP		573.5	598.0	560.5	613.0	611.5	643.5	548.0	578.9	606.1	633.8
	Change, %			(4.1)	2.3	(6.4)	(6.2)	(10.9)	4.7	(0.9)	(5.4)	(9.5)
	2-EH		471.0	495.5	423.0	495.5	509.0	516.0	380.5	372.9	476.5	494.0
	Change, %			(4.9)	11.3	(4.9)	(7.5)	(8.7)	23.8	26.3	(1.2)	(4.7)
	ABS		1,261.0	1,325.5	1,268.0	1,395.5	1,359.0	1,421.0	1,150.5	947.6	1,351.2	1,389.4
	Change, %			(4.9)	(0.6)	(9.6)	(7.2)	(11.3)	9.6	33.1	(6.7)	(9.2)
	SBR	BD spread	175.0	200.0	135.0	140.0	290.0	325.0	(100.0)	366.2	499.4	280.9
	Change, %			(12.5)	29.6	25.0	(39.7)	(46.2)	(275.0)	(52.2)	(65.0)	(37.7)
	SM		781.0	835.5	723.0	755.5	724.0	768.5	720.5	665.1	760.3	785.0
	Change, %			(6.5)	8.0	3.4	7.9	1.6	8.4	17.4	2.7	(0.5)
	Caustic											
	Change, %											
	PX		576.0	550.5	360.5	328.0	346.5	343.5	370.5	390.9	351.0	369.9
	Change, %			4.6	59.8	75.6	66.2	67.7	55.5	47.4	64.1	55.7
	PO	propylene sprea	862.5	822.5	787.5	705.0	945.0	1,202.5	747.5	691.1	777.6	806.8
	Change, %			4.9	9.5	22.3	(8.7)	(28.3)	15.4	24.8	10.9	6.9
	Caprolactam	benzene spread	1,272.5	1,265.0	1,307.5	1,245.0	1,330.0	975.0	1,027.5	698.2	1,097.6	1,259.3
	Change, %			0.6	(2.7)	2.2	(4.3)	30.5	23.8	82.3	15.9	1.1
	PTA	px spread	125.5	143.0	139.8	141.3	118.3	85.3	44.0	60.4	76.7	130.4
	Change, %			(12.2)	(10.2)	(11.2)	6.1	47.2	185.2	107.7	63.6	(3.8)

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

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Global peers

	Currency	08/31	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER 18E	PER 19E	PBR 18E	PBR 19E	EV/EBITDA 18E	EV/EBITDA 19E
Petrochemical																
DowDuPont	USD	70.1	(0.1)	1.3	2.0	9.4	2.5	5.2	(1.5)	168,245	17.7	14.9	1.8	1.7	10.2	9.2
Eastman	USD	97.0	(0.7)	(2.0)	(6.4)	(7.0)	(3.7)	12.6	4.7	13,550	11.6	10.7	2.5	2.2	8.7	8.1
BASF	EUR	79.6	(1.0)	(0.1)	(3.0)	(5.9)	(4.5)	(2.3)	(13.2)	101,214	14.6	13.6	2.4	2.2	7.8	7.4
Akzo Nobel	EUR	80.5	(1.2)	1.2	1.8	7.2	5.5	4.8	10.3	22,073	17.0	15.8	3.0	2.8	9.3	8.8
Arkema	EUR	107.9	(0.3)	0.6	0.6	3.5	3.8	18.2	6.3	9,270	13.2	12.2	1.7	1.6	6.3	6.0
Lanxess	EUR	67.7	(1.2)	(1.4)	(3.7)	0.0	3.7	8.0	2.1	7,282	15.5	13.1	2.1	1.9	9.3	8.2
Sumitomo Chemical	JPY	631	(1.7)	1.3	(1.6)	(4.2)	0.0	(4.2)	(22.1)	11,911	10.1	10.5	1.3	1.2	7.4	8.0
Mitsubishi Chemical	JPY	996	(1.2)	2.2	2.2	(1.2)	(5.9)	(2.6)	(19.5)	16,544	9.2	8.7	1.3	1.2	6.3	6.1
Shin-Etsu Chemical	JPY	10,425	(1.6)	(1.6)	(7.5)	(4.3)	(2.4)	7.2	(9.0)	43,948	18.5	16.6	1.9	1.8	8.1	7.4
Asahi Kasei	JPY	1,630	(0.6)	2.6	9.4	9.0	24.4	23.8	12.1	18,109	14.4	13.6	1.5	1.4	7.4	7.0
JSR	JPY	2,157	(1.8)	0.6	0.7	1.6	(13.3)	0.7	(2.8)	4,455	14.5	13.4	1.2	1.1	7.7	7.2
Nitto Denko	JPY	8,628	(0.9)	3.9	6.8	0.8	1.4	(11.0)	(13.8)	15,450	15.7	14.6	2.1	1.9	7.3	7.0
SABIC	SAR	126.0	0.0	2.4	(2.2)	(3.4)	20.4	27.4	24.2	80,773	14.2	13.7	1.7	1.7	7.3	7.1
Yansab	SAR	71.7	0.0	(1.0)	(3.0)	(2.7)	6.0	27.2	21.5	8,861	13.7	13.9	2.2	1.9	9.0	8.9
Formosa Plastics	TWD	112.5	0.4	0.0	0.0	4.7	11.9	19.8	14.0	21,114	14.4	13.9	1.8	1.8	18.9	19.2
Formosa Fiber	TWD	123.0	1.2	1.2	2.1	7.0	17.1	29.6	19.4	20,511	13.7	13.4	1.7	1.7	11.6	11.5
Nan Ya Plastics	TWD	85.4	1.1	1.2	0.6	2.0	9.1	12.1	9.6	20,648	14.8	15.3	1.7	1.7	16.2	16.4
Sinopec Shanghai	CNY	5.50	0.0	4.4	1.9	(4.5)	(5.5)	(14.9)	(13.1)	9,462	12.0	12.6	2.2	2.0	6.8	7.3
Sinopec Yizheng(Fibe	CNY	1.97	(0.5)	(1.5)	1.5	(6.2)	(14.0)	(38.4)	(26.2)	5,394	50.4	66.3	5.3	5.0	13.9	10.3
Reliance	INR	1,242	(2.6)	(2.8)	4.7	34.8	30.9	55.7	36.5	93,404	14.4	12.9	1.7	1.5	9.4	8.7
Industries Qatar	QAR	124.0	0.0	3.7	(0.4)	21.0	19.1	36.3	27.8	16,144	14.5	13.9	1.6	1.5	46.4	27.2
PTT Chemical	THB	81.8	(1.8)	1.6	0.0	(8.4)	(17.4)	6.9	(3.8)	11,766	10.7	10.4	1.4	1.3	5.5	5.4
Petronas	MYR	9.5	0.0	1.0	5.9	17.5	16.8	32.1	22.9	15,624	16.1	15.5	2.0	1.9	9.2	8.9
LG화학	KRW	366,000	0.7	0.0	(2.4)	8.1	(4.6)	(3.4)	(9.6)	27,313	13.8	12.8	1.8	1.6	6.5	6.1
롯데케미칼	KRW	316,000	(0.2)	1.4	(12.1)	(14.2)	(33.4)	(20.9)	(14.1)	11,632	5.5	5.2	0.9	0.8	3.6	3.3
한화케미칼	KRW	20,250	(3.1)	3.3	(4.3)	(21.7)	(37.1)	(42.7)	(35.9)	5,050	5.7	5.5	0.8	0.7	6.7	6.5
금호석유	KRW	102,000	1.5	(0.5)	(9.7)	(2.9)	14.0	29.4	2.5	2,969	14.1	11.9	1.6	1.5	9.3	8.4
SKC	KRW	47,050	0.1	2.8	9.7	21.7	22.0	27.5	0.1	1,643	9.9	8.7	1.1	1.0	8.8	7.9
국도화학	KRW	58,700	1.4	0.7	(1.5)	(9.3)	(5.6)	8.5	(7.0)	359	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
효성	KRW	6,670	(1.9)	4.9	7.6	(3.8)	(27.6)	(9.4)	(12.0)	4,595	8.2	7.3	1.1	1.0	7.2	6.8
Average			**(0.5)**	**1.0**	**(0.0)**	**1.6**	**1.1**	**8.1**	**0.3**							
Refinery																
Valero	USD	117.9	(1.0)	(2.2)	(0.4)	(2.7)	27.9	73.1	28.3	40,608	14.1	13.4	2.0	2.0	6.9	6.9
Conoco Phillips	USD	73.4	(0.2)	1.1	1.7	9.0	35.8	68.2	33.8	66,136	34.0	25.9	2.2	2.2	7.2	6.7
Formosa Petrochemic	TWD	126.0	0.8	(0.8)	4.6	3.7	12.0	18.3	9.1	37,040	18.2	18.7	3.2	3.2	11.7	12.1
Andeavor	USD	152.8	(0.7)	(1.6)	1.8	5.8	66.1	52.6	33.6	17,904	12.9	11.4	1.8	1.7	7.3	7.1
Marathon Petroleum	USD	82.3	(1.0)	(1.8)	1.8	4.1	26.2	56.9	24.7	32,812	15.0	12.8	2.6	2.7	7.7	7.5
Devon Energy	USD	42.9	(0.5)	0.6	(4.6)	3.3	36.9	36.7	3.7	22,192	17.5	14.0	2.7	2.3	8.4	7.4
Hollyfrontier	USD	74.5	(0.2)	1.3	(0.1)	(3.4)	69.1	138.0	45.5	9,094	16.8	15.2	1.8	1.8	8.0	8.0
Phillips 66	USD	118.5	(0.9)	(0.6)	(3.9)	1.7	29.7	41.4	17.2	51,561	15.6	14.5	2.3	2.2	9.0	8.8
Murphy Oil	USD	30.8	(2.2)	(1.8)	(7.3)	0.3	16.9	36.1	(0.7)	5,548	162.4	113.2	1.2	1.1	4.9	4.5
JX Holdings	JPY	782.4	(2.2)	0.6	(4.5)	11.3	21.3	47.0	7.6	22,130	8.8	8.0	0.9	0.9	7.0	6.6
Idemitsu	JPY	5,610.0	(1.8)	3.3	11.5	53.5	40.1	108.9	24.0	8,360	7.9	7.5	1.0	0.9	6.8	6.8
Nesteoil	EUR	74.8	(0.2)	0.4	5.9	7.4	30.6	101.9	40.2	16,473	16.7	16.7	2.9	2.7	10.2	10.3
Ashland	USD	84.2	0.3	(0.8)	2.5	8.3	20.5	35.7	18.3	4,550	21.6	18.7	1.3	1.3	10.2	9.6
Fuchs Petrolub	EUR	50.5	(1.5)	1.6	4.5	12.5	10.1	8.0	14.0	7,127	22.1	20.9	4.1	3.7	13.0	12.3
SK이노베이션	KRW	193,000	0.5	(2.3)	(2.8)	(6.3)	(7.0)	2.4	(5.6)	17,975	7.9	7.7	0.9	0.9	4.9	4.8
S-Oil	KRW	119,500	(0.8)	(2.8)	1.7	11.2	(5.2)	(4.8)	2.1	12,400	9.3	8.1	1.8	1.6	7.6	6.6
GS	KRW	53,100	(0.6)	(0.9)	(1.3)	(8.9)	(18.6)	(24.8)	(14.6)	5,467	6.0	5.5	0.7	0.6	6.9	6.3
Average			**(0.7)**	**(0.4)**	**0.7**	**6.5**	**24.3**	**46.8**	**16.5**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임
* 국내업체의 multiple은 Dataguidepro 기준임

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SK 증권

Global peers

	Currency	08/31	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER 18E	PER 19E	PBR 18E	PBR 19E	EV/EBITDA 18E	EV/EBITDA 19E
E&P/Shale																
Exxon Mobil	USD	80	(0.4)	0.7	(1.6)	(1.3)	6.1	5.0	(4.1)	339,425	17.2	14.5	1.8	1.7	7.7	6.8
BP	GBP	547	(1.7)	(2.9)	(4.5)	(5.0)	17.9	22.9	4.7	141,680	12.8	11.7	1.4	1.3	5.0	4.6
Shell	EUR	2,502	(1.8)	(2.4)	(4.3)	(4.0)	11.2	17.6	0.9	271,530	11.9	10.2	1.3	1.3	5.6	5.2
Chevron	USD	118	(1.1)	(0.5)	(6.2)	(4.7)	6.1	10.1	(5.4)	226,987	15.0	13.6	1.5	1.5	6.2	5.7
Total	EUR	54	(1.4)	(1.8)	(3.6)	3.5	18.4	24.0	17.0	166,526	11.6	10.6	1.3	1.3	5.7	5.2
Sinopec	CNY	7	0.6	3.2	1.2	(3.0)	8.1	13.8	11.6	121,059	10.4	10.1	1.1	1.0	4.0	3.9
Petrochina	CNY	8	(1.3)	(1.1)	4.0	0.8	1.0	(0.9)	(0.6)	205,739	24.7	20.5	1.2	1.2	5.4	5.2
CNOOC	CNY	10	(2.1)	(2.8)	8.4	(1.6)	(4.4)	(8.4)	(2.5)	78,954	9.7	9.0	1.3	1.2	3.8	3.7
Gazprom	RUB	150	2.7	4.4	4.3	3.4	8.2	27.1	14.9	52,579	3.2	3.3	0.2	0.3	2.5	2.5
Rosneft	RUB	436	(0.3)	1.8	4.0	13.1	36.4	43.3	49.5	68,395	8.2	6.7	1.0	0.9	4.7	4.3
Anadarko	USD	64	(0.1)	1.2	(12.0)	(7.7)	12.1	57.3	20.1	32,978	22.1	15.9	2.7	2.3	6.4	5.5
Petrobras	BRL	19	2.4	5.2	(2.3)	1.5	(10.5)	41.1	19.6	66,500	6.9	5.7	0.7	0.6	4.5	4.1
Lukoil	USD	4,701	(0.0)	4.4	5.6	11.7	25.4	59.9	41.0	58,689	5.7	5.8	0.8	0.8	N/A	N/A
Kinder	USD	18	(0.4)	(1.5)	(0.4)	6.1	9.9	(8.4)	(2.0)	47,497	22.5	18.0	1.2	1.2	10.6	10.4
Equinor ASA	NOK	215	(1.4)	(0.1)	(0.7)	(0.1)	23.0	46.3	22.8	85,631	13.1	12.0	2.0	1.8	3.4	3.2
BHP	AUD	33	(1.7)	1.5	(4.7)	1.3	12.1	21.3	12.3	121,648	13.6	15.0	2.3	2.2	6.1	6.4
PTT E&P	THB	143	0.0	2.2	2.9	5.9	23.9	62.9	42.5	17,249	13.7	12.5	1.4	1.3	4.4	4.0
Petronas gas	MYR	19	0.0	1.1	(0.2)	6.4	7.3	1.6	7.0	8,990	19.5	19.4	2.8	2.7	10.7	10.6
Chesapeake	USD	4	(1.8)	(3.1)	(6.1)	(0.9)	49.7	21.7	11.9	4,041	5.7	5.7	#N/A N/A	7.2	6.6	6.4
Noble Energy	USD	30	(0.6)	0.7	(17.7)	(16.8)	(2.4)	25.0	2.0	14,358	28.4	22.1	1.3	1.3	7.1	6.1
Average		**0**	**(0.5)**	**0.5**	**(1.7)**	**0.4**	**13.0**	**24.2**	**13.1**							
PV																
WACKER	EUR	124.3	(1.6)	(1.2)	(0.2)	(10.6)	(4.6)	15.4	(23.4)	7,514	17.7	15.9	1.9	1.8	6.6	6.3
GCL-Poly	HKD	0.5	1.9	0.0	(23.2)	(38.4)	(57.3)	(39.8)	(62.1)	1,238	5.9	4.9	0.3	0.3	6.9	6.3
SunPower	USD	6.7	(0.3)	(1.0)	(7.4)	(19.9)	(6.5)	(24.0)	(20.3)	947	#N/A N/A	#N/A N/A	96.0	960.0	16.6	10.4
Canadian Solar	USD	14.4	1.3	3.6	6.5	(13.5)	(9.4)	(8.6)	(14.8)	841	10.0	10.1	0.8	0.8	6.7	7.5
JA Solar	USD	7.5	0.0	0.0	0.0	3.5	0.7	12.1	0.4	356	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Yingli	USD	0.3	(1.8)	(6.7)	(30.7)	(83.6)	(83.0)	(88.6)	(83.4)	5	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
First Solar	USD	52.1	(0.2)	0.0	(0.5)	(23.0)	(19.0)	10.9	(22.9)	5,458	32.0	16.8	1.0	0.9	7.8	4.1
한화큐셀	USD	8.4	0.4	1.0	32.5	16.8	2.1	13.6	20.1	702	15.1	31.2	#N/A N/A	#N/A N/A	8.9	9.1
OCI	KRW	115,500	0.0	5.5	16.9	(12.8)	(29.6)	17.5	(15.1)	2,466	0.0	12.9	0.0	0.8	0.0	5.6
웅진에너지	KRW	2,975	(0.8)	0.2	(6.7)	(42.2)	(58.5)	(66.3)	(63.8)	79	N/A	0.0	0.8	0.0	5.6	0.0
신성솔라에너지	KRW	1,385	0.0	0.0	4.5	(21.1)	(23.7)	(34.0)	(27.7)	214	N/A	0.8	0.0	5.6	0.0	2.5
Average			**(0.1)**	**0.1**	**(0.8)**	**(22.3)**	**(26.3)**	**(17.4)**	**(28.5)**							
Gas Company																
Towngas China	HKD	7.2	0.4	2.4	(7.3)	(6.1)	13.7	36.4	15.1	2,588	14.1	12.5	1.2	1.1	12.7	11.5
Kulun	HKD	8.2	(1.9)	13.4	20.9	14.8	13.6	8.2	0.7	8,433	11.2	9.7	1.3	1.2	5.7	5.2
Beijing Enterprise	HKD	37.7	3.9	6.2	(1.3)	(13.1)	(11.5)	(13.8)	(18.9)	6,054	6.5	5.9	0.6	0.6	11.9	11.5
ENN Energy	HKD	71.5	(1.4)	(3.2)	(10.5)	(11.5)	17.6	42.0	28.3	10,251	16.2	13.9	3.4	2.9	10.1	8.8
China Resources Gas	HKD	35.8	(1.1)	0.3	(3.9)	20.0	35.2	29.5	26.1	10,130	17.6	15.6	3.1	2.7	9.7	8.7
China Gas Holdings	HKD	25.0	(1.8)	(2.0)	(21.5)	(23.3)	2.9	26.3	15.5	16,143	15.9	13.5	3.7	3.1	12.9	11.0
Shenzen Gas	HKD	14.7	0.7	3.8	1.8	(14.2)	(7.1)	2.4	(1.1)	3,958	9.1	7.6	1.1	1.0	7.5	6.7
Shann Xi	CNY	7.2	(0.1)	0.4	(8.1)	(13.5)	(2.7)	(17.6)	(15.3)	1,161	16.5	14.6	1.3	1.3	#N/A N/A	#N/A N/A
Suntien	HKD	2.4	0.9	7.8	(6.0)	(14.2)	27.6	38.8	14.0	1,117	6.2	5.4	0.8	0.7	8.2	7.1
China Oil & Gas	HKD	0.6	0.0	(3.2)	(3.2)	(1.6)	(12.9)	10.9	(28.2)	454	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Average			**(0.0)**	**2.6**	**(3.9)**	**(6.3)**	**7.6**	**16.3**	**3.6**							
EV																
LG화학	KRW	366,000	0.7	0.0	(2.4)	8.1	(4.6)	(3.4)	(9.6)	23,126	14.0	12.6	1.6	1.4	6.8	6.1
삼성SDI	KRW	236,000	0.2	5.4	3.1	17.7	38.4	20.1	15.4	14,526	22.4	15.9	1.4	1.3	13.8	10.9
Panasonic	JPY	1309.0	(2.8)	(2.7)	(9.0)	(12.1)	(19.2)	(10.7)	(20.6)	28,908	11.9	10.5	1.6	1.5	4.8	4.4
GS Yuasa	JPY	548.0	1.7	8.1	5.2	6.2	(3.4)	0.4	(2.3)	2,040	16.6	15.3	1.2	1.2	7.3	6.8
NEC	JPY	3070.0	1.0	2.4	(1.0)	0.0	(3.5)	5.5	1.0	7,199	23.2	12.7	0.9	0.8	7.7	5.6
BYD Auto	CNY	44.5	(1.2)	2.3	5.3	(13.1)	(29.3)	(8.3)	(31.7)	17,206	29.7	22.2	2.1	2.0	12.6	10.9
Tesla Motors	USD	301.7	(0.5)	(6.6)	1.2	5.9	(10.0)	(15.2)	(3.1)	51,461	#N/A N/A	94.9	9.1	8.6	39.1	17.8
Kandi Technologies	USD	4.2	0.0	3.8	4.4	(24.5)	(19.4)	5.1	(39.0)	214	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Average			**(0.1)**	**1.6**	**0.8**	**(1.5)**	**(6.4)**	**(0.8)**	**(11.2)**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임