SK Energy Daily

에너지/Commodity/정유화학, 손지우 I 3773-8827, jwshon@sk.com
R.A. 유승우 I 3773-9180, yswbest@sk.com
SK 증권

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1. News Summary (3 page)

News		Conclusion
WTI comment	사흘만에 반등…WTI 3.2%↑	
Headline	[주간가격] 에틸렌, WoW $60/mt 상승해 CFR SEA $1,230/mt로 마감	다운스트림 마진 축소는 가동률을 낮춰 에틸렌 가격에 하락 압력 줄 것
News 1.	[주간가격] MEG, WoW $100/mt 하락해 CFR China $895/mt로 마감	춘절 이전 쌓아둔 재고량이 줄어드는 동안 가격 하락 압력은 불가피함
News 2.	[주간가격] BD, 플랫한 모습 보이며 FOB Korea $1,390/mt로 마감	라니냐 효과로 천연고무 가격 상승과 함께 BD capa가 추가 진입할 것
News 3.	[주간가격] SBR, 플랫한 모습 보이며 CFR SEA $1,750/mt로 마감	라니냐 효과로 BD 가격 지지되며 SBR도 가격 하락 압력은 제한될 것
News 4.	[주간가격] PX, WoW $14.67/mt 하락해 FOB Korea $934.33/mt로 마감	OSP도 전월대비 하락해 유가가 단기적으로 하락하며 PX도 약세 전망

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	62.0	3.2	1.3	0.4	8.2	27.9
Dubai	$/bbl	60.3	(0.9)	0.0	(5.9)	0.0	17.8
Gasoline	$/bbl	74.3	(0.9)	(1.2)	(5.5)	(0.6)	15.1
Diesel	$/bbl	75.3	(0.6)	0.6	(5.1)	1.9	19.9
Complex margin	$/bbl	8.4	(0.0)	(0.3)	0.2	0.4	1.7
1M lagging	$/bbl	4.5	0.3	1.9	(2.5)	(1.5)	0.7
Petrochemical			%	%	%	%	%
Naphtha	$/t	554	(1.6)	(1.2)	0.2	(4.9)	17.6
Butadiene	$/t	1,390	0.0	0.0	2.6	36.3	(46.5)
HDPE	$/t	1,340	0.0	(0.7)	(1.5)	3.9	16.5
MEG	$/t	895	(4.3)	(10.1)	(12.7)	(2.0)	14.7
PX	$/t	934	(0.8)	(1.5)	0.3	5.8	9.2
SM	$/t	1,326	1.1	(4.9)	(4.7)	0.3	4.7
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	2.73	(0.9)	1.4	5.2	1.3	(5.5)
Natural rubber	$/t	1,440	(0.7)	(1.4)	2.9	2.1	(26.9)
Cotton	C/lbs	84.5	(0.7)	2.2	10.2	14.7	9.4

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	03/05	$/t	1,188	1.9	(3.5)	(1.0)	4.2
Propylene	03/05	$/t	985	(2.0)	(3.0)	16.6	0.5
Benzene	03/05	$/t	905	(2.2)	(4.5)	1.4	(5.7)
Toluene	03/05	$/t	750	0.0	(2.0)	4.9	2.0
Xylene	03/05	$/t	763	0.3	(0.3)	9.7	4.5
PP	03/05	$/t	1,308	2.3	3.2	13.9	14.4
PVC	03/05	$/t	980	0.0	5.9	15.3	4.3
ABS	03/05	$/t	2,120	2.9	2.9	6.0	10.4
SBR	03/05	$/t	1,750	(2.8)	(0.3)	6.7	(39.9)
SM	03/05	$/t	1,453	0.7	1.2	9.4	4.1
BPA	03/05	$/t	1,963	0.4	3.7	13.3	38.9
Caustic	03/05	$/t	590	3.3	7.5	(16.3)	35.3
2-EH	03/05	$/t	1,125	4.2	6.1	9.2	10.3
Caprolactam	03/05	$/t	2,130	3.4	2.9	5.4	(8.2)
Solar				%	%	%	%
Polysilicon	03/07	$/kg	15.1	(5.6)	(8.7)	(10.8)	(5.6)
Module	03/07	$/W	0.31	(0.3)	(1.3)	(2.9)	(12.1)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	74.6	0.6	(1.3)	(1.6)	(9.8)	(8.7)
Shell	EUR	2,262	(0.2)	0.5	0.8	(4.1)	8.2
Petrochina	CNY	8.03	0.0	0.9	1.0	(0.4)	0.9
Gazprom	RUB	139.8	0.9	0.9	3.1	5.4	8.4
Petrobras	BRL	22.4	3.2	4.1	19.3	45.9	54.4
Refinery							
Phillips66	USD	95.9	0.8	5.0	3.6	(3.7)	24.8
Valero	USD	94.3	1.1	2.3	6.9	7.7	41.9
JX	JPY	645.5	0.2	0.1	(1.7)	(1.7)	16.3
Neste Oil	EUR	59.5	(1.5)	3.9	3.0	16.7	76.4

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	85.1	0.1	2.1	(0.5)	(9.4)	(5.7)
DowDuPont	USD	72.2	2.3	5.6	4.0	2.1	13.7
SABIC	SAR	108.2	0.0	3.3	3.9	6.6	12.1
Formosa Pla.	TWD	101.5	0.0	1.0	3.8	9.1	14.7
Shin-Etsu	JPY	10,980	1.4	2.8	(2.1)	(7.8)	14.3
Renewable							
Wacker	EUR	137.3	1.7	5.4	(1.3)	(3.9)	32.3
First Solar	USD	67.90	0.3	5.5	10.9	(3.0)	109.1
GCL-Poly	HKD	1.23	4.2	(0.8)	6.0	(2.4)	21.8
Tesla Motors	USD	327.2	(0.6)	(2.4)	5.4	3.8	33.6

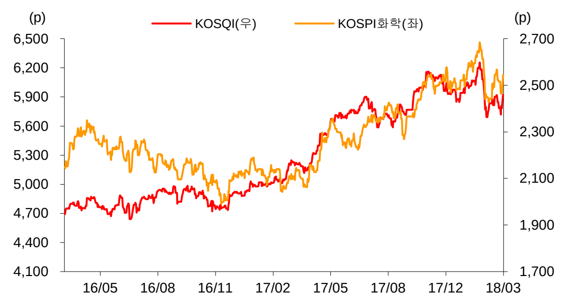
4. Coverage Summary

	03/09	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	2,459	1.1	2.4	2.6	(0.2)	4.8	17.4				* 추정치는 12M fwd 기준임	
KOSPI화학	6,128	2.2	1.1	4.2	2.4	6.7	23.0				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	406,500	5.0	6.0	8.4	2.0	9.9	48.9	매수	450,000	10.7	13.57	1.92
롯데케미칼	429,500	(1.0)	(9.5)	9.6	20.3	5.8	14.7	매수	410,000	(4.5)	11.73	1.29
한화케미칼	31,300	0.8	(2.8)	(3.4)	4.7	(12.3)	25.2	매수	39,000	24.6	11.95	0.81
금호석유화학	90,600	(1.0)	1.2	0.6	5.1	15.1	22.4	매수	150,000	65.6	11.06	1.45
KCC	356,000	0.1	0.6	(7.0)	(6.8)	(6.3)	3.6	매수	450,000	26.4	13.19	0.53
OCI	155,500	(0.3)	(5.2)	2.6	29.0	51.0	82.5	매수	180,000	15.8	14.61	1.09
SKC	39,400	0.6	2.2	3.8	(2.8)	3.4	26.9	매수	55,000	39.6	9.91	0.97
SK이노베이션	204,500	1.0	(1.4)	7.3	0.7	9.4	30.3	매수	230,000	12.5	10.83	1.03
S-Oil	122,000	0.8	(3.2)	5.6	2.5	(0.4)	38.0	매수	140,000	14.8	13.95	2.21
GS	65,800	1.2	0.9	3.0	9.3	(0.3)	21.6	매수	80,000	21.6	6.43	0.85
SK가스	95,100	2.3	(1.1)	(2.1)	(0.4)	(12.4)	(16.6)	매수	130,000	36.7	8.24	0.64
포스코대우	20,000	1.5	3.1	(9.1)	13.6	(4.5)	(17.9)	매수	25,000	25.0	9.12	0.81
LG상사	26,300	0.4	0.2	(6.2)	(2.6)	(7.2)	(18.2)	매수	38,000	44.5	8.86	0.75
한국전력	32,500	2.7	(1.2)	(8.6)	(14.5)	(22.2)	(21.8)	매수	50,000	53.8	6.98	0.26
한국가스공사	47,250	0.4	(3.2)	2.1	12.9	7.0	(2.5)	매수	60,000	27.0	8.93	0.70

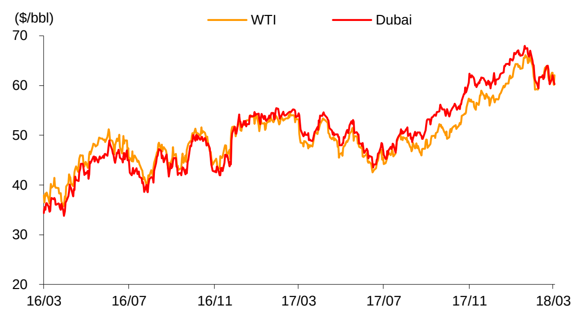
에너지/Commodity/정유화학, 손지우 I 3773-8827, jwshon@sk.com
R.A. 유승우 I 3773-9180, yswbest@sk.com

Key Chart

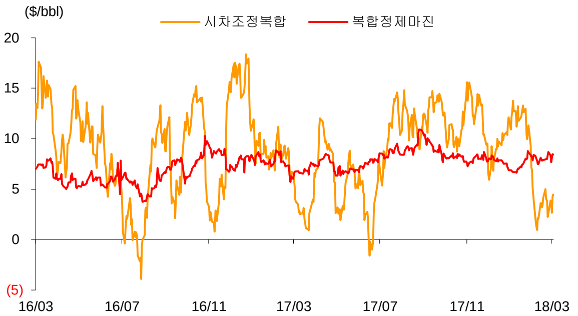
KOSPI/KOSPI화학



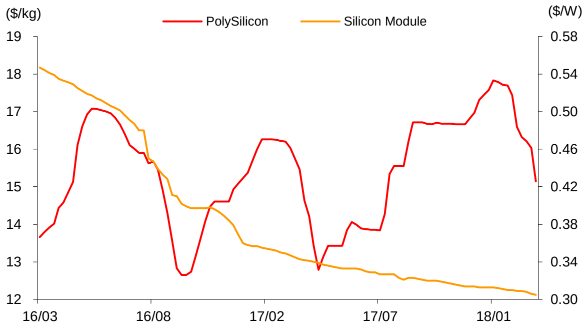
WTI/Dubai



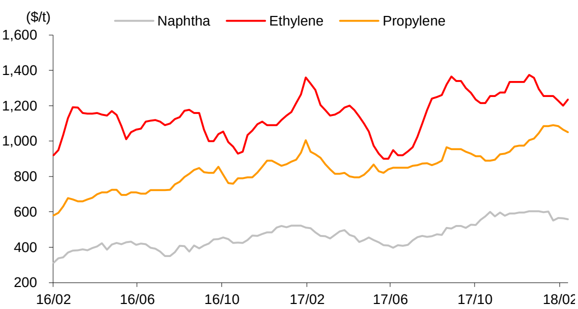
Complex & 1M lagging margin



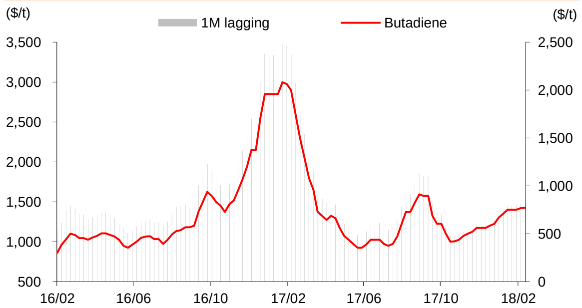
Polysilicon & Module prices



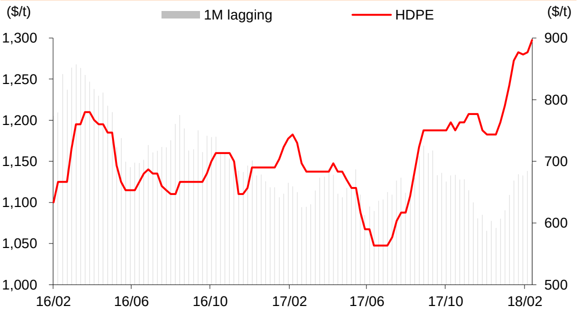
Naphtha/Ethylene/Propylene prices



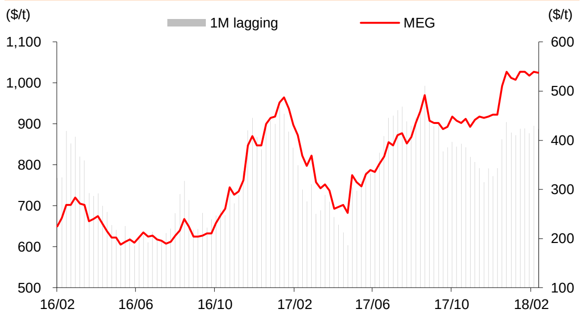
Butadiene price & 1M lagging naphtha spread



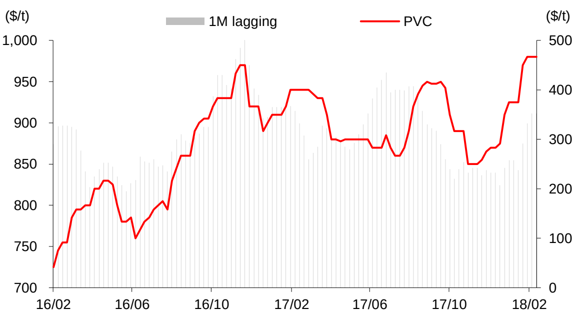
HDPE price & 1M lagging naphtha spread



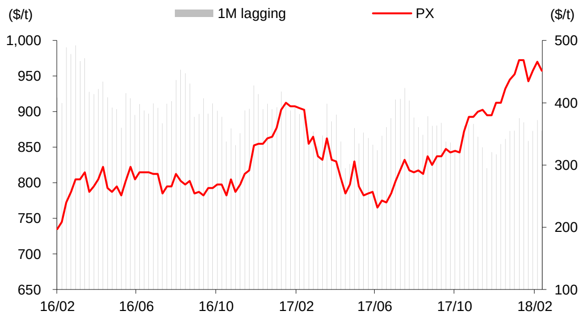
MEG price & 1M lagging naphtha spread



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 $60/mt 상승해 CFR SEA $1,230/mt로 마감
결론	다운스트림 마진 축소는 가동률을 낮춰 에틸렌 가격에 하락 압력 줄 것
세부	
	1) 4월 도착분에 대한 중국 수요가 늘어 주중 급격히 강세 전환함
	2) 일본을 비롯한 주요 크래커들의 TA 시즌 공급 부족 대비 수요가 증가함
	3) SM과 MEG와 같은 다운스트림에서의 마진 축소가 가격 상승폭 제한
	4) SM 마진은 $130/mt, MEG는 역마진 수준으로 하락하는 모습이었음
	5) 다운스트림 마진 축소는 가동률을 낮춰 에틸렌 가격에 하락 압력 줄 것

WTI Comment	(출처: 연합뉴스)
제목	사흘만에 반등…WTI 3.2%↑
상승	지난달 미국의 비농업 일자리가 1년 7개월 만에 최대치를 기록
요인	북미 간 첫 정상회담 가능성이 부각
하락	
요인	

Issue 1	(출처: Platts)
제목	[주간가격] MEG, WoW $100/mt 하락해 CFR China $895/mt로 마감
결론	춘절 이전 쌓아둔 재고량이 줄어드는 동안 가격 하락 압력은 불가피함
세부	
	1) 폴레에스터 수요 감소와 중국 내수 재고가 많아 10일 연속 약세 시현함
	2) 동중국항 MEG 재고는 2년 래 최고치인 70.7만톤 수준을 보이고 있음
	3) 춘절 이후 중국 폴리에스터 공장 가동률이 80.94% 수준으로 회복 더딤
	4) MEG 가격이 지속 하락중인 가운데 에틸렌 가격도 올라 역마진 구간임
	5) 춘절 이전 쌓아둔 재고량이 줄어드는 동안 가격 하락 압력은 불가피함

Issue 2	(출처: Platts)
제목	[주간가격] BD, 플랫한 모습 보이며 FOB Korea $1,390/mt로 마감
결론	라니냐 효과로 천연고무 가격 상승과 함께 BD capa가 추가 진입할 것
세부	
	1) 내수 공급이 부족해 중국에서 강세를 보인 가운데 아시아 BD는 플랫
	2) Sinopec은 동중국 BD 오퍼 가격을 $1,456/mt로 2.8% 인상함
	3) 동남아시아 Chandra Asri가 디보틀넥킹으로 10만톤 규모 셧다운 돌입
	4) Chandra Asri는 디보틀넥킹으로 3.7만톤의 capa가 확장될 예정임
	5) 라니냐 효과로 천연고무 가격 상승과 함께 BD capa가 추가 진입할 것

Issue 3	(출처: Platts)
제목	[주간가격] SBR, 플랫한 모습 보이며 CFR SEA $1,750/mt로 마감
결론	라니냐 효과로 BD 가격 지지되며 SBR도 가격 하락 압력은 제한될 것
세부	
	1) 원재료인 BD가 플랫한 모습 보인 가운데 SBR도 플랫한 모습 보였음
	2) 타이어 메이커들은 천연고무 가격이 약세를 보일 것을 우려함
	3) 관계자, "천연고무 가격 불확실성으로 거래량도 적은 상태임"
	4) 도쿄 원자재 시장에서 천연고무 8월 도착물 가격은 WoW 0.9% 하락함
	5) 라니냐 효과로 BD 가격 지지되며 SBR도 가격 하락 압력은 제한될 것

Issue 4	(출처: Platts)
제목	[주간가격] PX, WoW $14.67/mt 하락해 FOB Korea $934.33/mt로 마감
결론	OSP도 전월대비 하락해 유가가 단기적으로 하락하며 PX도 약세 전망
세부	
	1) 원유 선물 가격 하락 센티먼트와 PTA 가격 약세로 PX도 약세 시현함
	2) 5월 ICE Brent유 선물 가격은 70cents/b 하락해 $63.76/b 기록함
	3) 이에 따라 Zhejiang Yisheng의 4월 카고 오퍼 가격인 $955/mt에 못미침
	4) OMPL은 향후 6개월간 5만톤에 대한 sell tender를 $36.5/mt 할인 제시
	5) OSP도 전월대비 하락해 유가가 단기적으로 하락하며 PX도 약세 전망

Issue 5	(출처: Platts)
제목	[주간가격] PTA, WoW $5/mt 하락해 CFR China $785/mt로 마감
결론	정기보수 종료로 역내 PTA 공급량 늘어나며 가격 하락 압력 가해질 것
세부	
	1) Zhengzhou 원자재 시장에서 5월 선물 가격이 WoW Yuan 246/mt 하락함
	2) 주초반 스팟 물량 수입 논의가 있었으나 선물 가격 하락하며 잦아듦
	3) 동북아 트레이더들은 인도 도착물들에 CFR China $23/mt 할증 제시
	4) Hanbang PetChem은 정기보수 후 60만톤 규모의 PTA 공장 램프업중
	5) 정기보수 종료로 역내 PTA 공급량 늘어나며 가격 하락 압력 가해질 것

Issue 6	(출처: PVinsights)
제목	[주간가격] 저효율셀 재고 급증으로 공급자들 새로운 고민 직면
결론	수요가 약세를 보이는 가운데 재고 부담이 더해져 약세 지속될 전망
세부	
	1) Polysilicon은 3월 다운스트림 수요 회복이 실패했다는 시그널 포착됨
	2) Multi-crystalline wafer는 탑 티어들이 가격 낮추며 제한적으로 하락함
	3) Multi-crystalline, Mono-crystalline cell도 춘절 이후 수요 회복 더뎌 하락
	4) Solar Panel은 1분기 글로벌 수요가 예상치를 하회하며 하락세 시현
	5) 수요가 약세를 보이는 가운데 재고 부담이 더해져 약세 지속될 전망

에너지/Commodity/정유화학. 손지우 I 3773-8827, jwshon@sk.com
R.A. 유승우 I 3773-9180, yswbest@sk.com
SK 증권

Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
F/X	USD/EUR	0.813	0.812	0.812	0.816	0.849	0.831	0.945	0.833	0.904	0.887	0.815
	Change, %		0.0	0.1	(0.4)	(4.3)	(2.2)	(14.0)	(2.4)	(10.1)	(8.3)	(0.2)
	USD/JPY	106.8	106.2	105.8	108.8	113.5	107.8	115.0	112.6	108.8	112.1	109.0
	Change, %		0.6	1.0	(1.8)	(5.9)	(0.9)	(7.1)	(5.2)	(1.8)	(4.7)	(2.0)
	USD/KRW	1,069.8	1,070.2	1,080.5	1,092.1	1,092.5	1,127.4	1,158.0	1,066.7	1,160.5	1,130.9	1,072.8
	Change, %		(0.0)	(1.0)	(2.0)	(2.1)	(5.1)	(7.6)	0.3	(7.8)	(5.4)	(0.3)
Agriculture	Corn	383.0	385.8	377.3	362.0	340.0	344.3	359.8	350.8	358.5	359.4	361.9
	Change, %		(0.7)	1.5	5.8	12.6	11.3	6.5	9.2	6.8	6.6	5.8
	Soybean	1,029.3	1,053.8	1,060.8	983.0	989.8	956.5	1,000.3	951.8	987.5	975.9	997.9
	Change, %		(2.3)	(3.0)	4.7	4.0	7.6	2.9	8.1	4.2	5.5	3.1
	Wheat	489.0	494.8	492.0	449.0	392.0	413.8	426.0	427.0	436.4	436.0	450.4
	Change, %		(1.2)	(0.6)	8.9	24.7	18.2	14.8	14.5	12.1	12.1	8.6
	Rice	12.2	12.3	12.3	12.3	12.1	12.5	9.5	11.7	10.3	11.1	12.1
	Change, %		(0.8)	(0.9)	(1.3)	0.8	(2.4)	28.5	4.1	17.6	9.9	0.6
	Oats	259.5	260.8	265.0	266.5	226.3	233.3	264.0	241.0	196.3	252.3	261.0
	Change, %		(0.5)	(2.1)	(2.6)	14.7	11.3	(1.7)	7.7	32.2	2.9	(0.6)
MYR/mt	Palm Oil	2,398.0	2,425.0	2,496.0	2,495.0	2,379.0	2,771.0	2,990.0	2,444.0	2,653.8	2,787.3	2,498.7
	Change, %		(1.1)	(3.9)	(3.9)	0.8	(13.5)	(19.8)	(1.9)	(9.6)	(14.0)	(4.0)
	Cocoa	2,478.0	2,506.0	2,320.0	2,031.0	1,892.0	1,972.0	1,931.0	1,892.0	2,854.0	2,005.2	2,078.1
	Change, %		(1.1)	6.8	22.0	31.0	25.7	28.3	31.0	(13.2)	23.6	19.2
	Cotton	84.5	85.1	82.7	76.7	73.7	75.6	76.6	78.6	65.6	73.5	79.9
	Change, %		(0.7)	2.2	10.2	14.7	11.8	10.3	7.5	28.9	14.9	5.7
	Sugar	12.8	12.9	13.4	13.7	14.1	14.1	18.0	15.2	18.2	15.8	13.7
	Change, %		(0.4)	(4.3)	(6.1)	(8.6)	(8.9)	(28.7)	(15.3)	(29.3)	(18.8)	(6.4)
	Coffee	118.9	119.0	120.4	121.9	120.6	129.4	138.8	126.2	136.1	133.0	122.0
	Change, %		(0.1)	(1.2)	(2.5)	(1.5)	(8.2)	(14.3)	(5.8)	(12.6)	(10.6)	(2.6)
Energy	WTI	62.0	60.1	61.3	59.2	57.4	47.5	49.3	60.4	43.4	51.0	62.7
	Change, %		3.2	1.3	4.8	8.2	30.7	25.9	2.7	43.0	21.7	(1.1)
	Brent	65.5	63.6	64.4	62.8	63.4	53.8	52.2	66.9	45.1	54.9	67.1
	Change, %		3.0	1.7	4.3	3.3	21.8	25.5	(2.1)	45.3	19.4	(2.3)
	Natural Gas	2.7	2.8	2.7	2.6	2.8	2.9	3.0	3.0	2.6	3.0	2.9
	Change, %		(0.9)	1.4	5.7	(1.4)	(5.5)	(8.1)	(7.5)	7.0	(9.6)	(5.4)
	Ethanol	1.5	1.5	1.5	1.4	1.3	1.5	1.5	1.3	1.5	1.5	1.4
	Change, %		(0.1)	3.6	7.6	13.6	(1.6)	1.5	14.4	(0.3)	0.9	7.1
	RBOB Gasoline	190.4	186.8	190.1	170.0	171.7	164.8	162.4	179.9	140.0	162.9	183.2
	Change, %		2.0	0.2	12.0	10.9	15.6	17.2	5.8	36.0	16.9	4.0
	Coal	99.4	100.0	102.9	101.2	97.6	98.5	78.2	100.8	65.5	88.2	104.4
	Change, %		(0.6)	(3.4)	(1.7)	1.9	1.0	27.1	(1.4)	51.8	12.7	(4.8)
Metal	Gold	1,323.3	1,322.0	1,322.8	1,316.2	1,248.5	1,346.5	1,201.2	1,302.6	1,248.5	1,258.6	1,330.3
	Change, %		0.1	0.0	0.5	6.0	(1.7)	10.2	1.6	6.0	5.1	(0.5)
	Silver	16.6	16.5	16.5	16.4	15.9	18.0	17.0	16.9	17.1	17.1	16.8
	Change, %		0.6	0.4	1.4	4.6	(7.6)	(2.2)	(2.1)	(3.0)	(2.8)	(1.5)
	Copper	6,962.0	6,833.0	6,898.0	6,755.0	6,571.0	6,693.0	5,690.0	7,247.0	4,872.0	6,199.4	7,052.8
	Change, %		1.9	0.9	3.1	6.0	4.0	22.4	(3.9)	42.9	12.3	(1.3)
	Nickel	896.7	858.8	879.9	834.0	706.4	734.0	678.0	809.1	646.4	680.2	851.4
	Change, %		4.4	1.9	7.5	26.9	22.2	32.3	10.8	38.7	31.8	5.3
	Zinc	3,277.0	3,230.0	3,355.0	3,385.0	3,082.5	3,031.0	2,681.5	3,319.0	2,097.5	2,888.5	3,426.7
	Change, %		1.5	(2.3)	(3.2)	6.3	8.1	22.2	(1.3)	56.2	13.4	(4.4)
	Lead	2,376.8	2,338.5	2,447.3	2,538.0	2,448.8	2,237.3	2,249.3	2,482.8	1,868.3	2,315.7	2,554.9
	Change, %		1.6	(2.9)	(6.4)	(2.9)	6.2	5.7	(4.3)	27.2	2.6	(7.0)
	Aluminum	14,035.0	14,035.0	14,300.0	14,105.0	14,055.0	15,910.0	13,545.0	15,020.0	12,373.5	14,556.6	14,446.6
	Change, %		0.0	(1.9)	(0.5)	(0.1)	(11.8)	3.6	(6.6)	13.4	(3.6)	(2.8)
	Cobalt	84,020.0	84,020.0	79,250.0	81,292.0	74,500.0	60,850.0	52,250.0	75,205.0	25,480.1	55,906.9	79,407.9
	Change, %		0.0	6.0	3.4	12.8	38.1	60.8	11.7	229.7	50.3	5.8
	HR Coil	820.0	820.0	836.0	742.0	635.0	638.0	625.0	662.0	519.3	620.1	725.3
	Change, %		0.0	(1.9)	10.5	29.1	28.5	31.2	23.9	57.9	32.2	13.1
	Scrap	400.0	385.0	389.0	372.0	349.0	380.0	372.0	367.0	275.7	344.7	379.2
	Change, %		3.9	2.8	7.5	14.6	5.3	7.5	9.0	45.1	16.0	5.5

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

에너지/Commodity/정유화학. 손지우 | 3773-8827, jwshon@sk.com
R.A. 유승우 | 3773-9180, yswbest@sk.com

SK 증권

Refining Price Data

Daily Price		03/09	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	**WTI**	62.0	60.1	61.3	61.8	57.4	47.5	48.5	53.7	43.4	50.9	62.8
	Change, %		*3.2*	*1.3*	*0.4*	*8.2*	*30.7*	*27.9*	*15.5*	*43.1*	*21.9*	*(1.1)*
	Dubai	60.3	60.8	60.3	64.1	60.3	53.2	51.2	53.8	41.3	53.1	64.0
	Change, %		*(0.9)*	*0.0*	*(5.9)*	*0.0*	*13.4*	*17.8*	*12.0*	*45.9*	*13.5*	*(5.9)*
Crude Oil	**Gasoline(휘발유)**	74.3	75.0	75.2	78.7	74.8	71.0	64.6	69.8	56.3	68.0	77.5
Product	*Change, %*		*(0.9)*	*(1.2)*	*(5.5)*	*(0.6)*	*4.6*	*15.1*	*6.4*	*32.1*	*9.3*	*(4.1)*
	Kerosene(등유)	76.8	77.8	79.5	81.7	74.0	68.2	61.6	66.4	52.9	65.2	80.2
	Change, %		*(1.2)*	*(3.3)*	*(5.9)*	*3.8*	*12.7*	*24.8*	*15.7*	*45.3*	*17.8*	*(4.2)*
	Diesel(경유)	75.3	75.8	74.9	79.4	73.9	69.3	62.8	65.5	52.1	65.6	78.6
	Change, %		*(0.6)*	*0.6*	*(5.1)*	*1.9*	*8.6*	*19.9*	*15.0*	*44.5*	*14.8*	*(4.2)*
	Bunker-C	55.3	55.7	55.4	58.0	54.4	50.1	46.4	52.1	35.5	49.7	57.7
	Change, %		*(0.7)*	*(0.3)*	*(4.6)*	*1.7*	*10.4*	*19.3*	*6.2*	*55.7*	*11.4*	*(4.1)*
	Naphtha	60.3	61.3	60.8	60.8	64.8	54.7	50.0	53.5	42.6	53.7	63.4
	Change, %		*(1.6)*	*(0.8)*	*(0.9)*	*(6.9)*	*10.3*	*20.6*	*12.8*	*41.5*	*12.2*	*(5.0)*
Dubai	**Gasoline(휘발유)**	14.1	14.2	15.0	14.6	14.5	17.9	13.4	16.0	14.9	14.9	13.5
Spread	*Change*		*(0.2)*	*(0.9)*	*(0.6)*	*(0.5)*	*(3.8)*	*0.6*	*(2.0)*	*(0.9)*	*(0.9)*	*0.6*
	Kerosene(등유)	16.6	17.0	19.2	17.7	13.7	15.0	10.4	12.6	11.6	12.1	16.2
	Change		*(0.4)*	*(2.6)*	*(1.1)*	*2.8*	*1.6*	*6.1*	*4.0*	*5.0*	*4.4*	*0.4*
	Diesel(경유)	15.0	15.0	14.6	15.3	13.7	16.2	11.6	11.7	10.8	12.5	14.6
	Change		*0.0*	*0.4*	*(0.3)*	*1.4*	*(1.1)*	*3.4*	*3.4*	*4.2*	*2.5*	*0.4*
	Bunker-C	(5.0)	(5.1)	(4.8)	(6.1)	(5.9)	(3.1)	(4.8)	(1.8)	(5.8)	(3.4)	(6.4)
	Change		*0.1*	*(0.1)*	*1.1*	*0.9*	*(1.9)*	*(0.2)*	*(3.2)*	*0.8*	*(1.5)*	*1.4*
	Naphtha	(0.0)	0.5	0.5	(3.2)	4.5	1.5	(1.2)	(0.4)	1.3	0.6	(0.6)
	Change		*(0.5)*	*(0.5)*	*3.2*	*(4.5)*	*(1.5)*	*1.2*	*0.4*	*(1.3)*	*(0.7)*	*0.6*
Refining	**Simple(단순)**	3.2	3.2	3.5	2.6	2.4	4.9	1.9	3.8	1.9	3.2	2.2
Margin	*Change*		*0.0*	*(0.4)*	*0.5*	*0.7*	*(1.7)*	*1.3*	*(0.6)*	*1.3*	*0.0*	*1.0*
	Complex(복합)	8.4	8.5	8.7	8.2	8.0	10.4	6.8	8.3	7.0	8.0	7.7
	Change		*(0.0)*	*(0.3)*	*0.2*	*0.4*	*(2.0)*	*1.7*	*0.2*	*1.5*	*0.4*	*0.7*
	Complex(lagging)	4.5	4.2	2.6	6.9	5.9	12.4	3.7	18.0	8.5	8.9	7.8
	Change		*0.3*	*1.9*	*(2.5)*	*(1.5)*	*(7.9)*	*0.7*	*(13.5)*	*(4.0)*	*(4.5)*	*(3.3)*

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

에너지/Commodity/정유화학, 손지우 I 3773-8827, jwshon@sk.com
R.A. 유승우 I 3773-9180, yswbest@sk.com

Petrochemical Price Data

Daily Price			03/09	03/08	03/07	03/06	03/05	03/02	03/01	02/28	02/27	02/26
Spot Price	**Naphtha**	CFR Japan	553.5	562.8	565.3	568.8	571.3	560.3	566.0	575.3	576.0	573.3
	Ethylene	CFR SE Asia	1,230.0	1,230.0	1,230.0	1,200.0	1,170.0	1,170.0	1,190.0	1,190.0	1,180.0	1,180.0
	Propylene	FOB Korea	1,025.0	1,030.0	1,030.0	1,030.0	1,025.0	1,025.0	1,035.0	1,035.0	1,035.0	1,035.0
	Butadiene	FOB Korea	1,390.0	1,390.0	1,390.0	1,390.0	1,390.0	1,390.0	1,390.0	1,390.0	1,390.0	1,390.0
	HDPE	CFR FE Asia	1,340.0	1,340.0	1,345.0	1,345.0	1,350.0	1,350.0	1,350.0	1,350.0	1,350.0	1,360.0
	LDPE	CFR FE Asia	1,230.0	1,230.0	1,230.0	1,240.0	1,240.0	1,240.0	1,240.0	1,240.0	1,240.0	1,250.0
	LLDPE	CFR FE Asia	1,210.0	1,210.0	1,210.0	1,210.0	1,210.0	1,210.0	1,210.0	1,210.0	1,210.0	1,210.0
	MEG	CFR China	895.0	935.0	951.0	983.0	983.0	995.0	1,027.0	1,037.0	1,050.0	1,053.0
	PP	CFR FE Asia	1,225.0	1,230.0	1,230.0	1,230.0	1,220.0	1,210.0	1,210.0	1,210.0	1,200.0	1,210.0
	PX	CFR China	934.3	942.0	944.3	955.3	952.3	949.0	956.5	966.0	972.0	972.0
	PTA	CFR China	785.0	793.0	793.0	795.0	790.0	790.0	785.0	785.0	785.0	785.0
	Benzene	FOB Korea	859.0	857.7	875.0	887.7	877.0	876.0	888.3	898.0	906.0	911.0
	Toluene	FOB Korea	685.0	685.0	695.0	703.0	703.0	709.0	714.0	726.5	731.5	729.5
	Xylene	FOB Korea	748.0	749.0	762.0	765.0	775.0	781.0	793.0	800.0	801.0	795.5
	SM	FOB Korea	1,326.0	1,311.0	1,336.0	1,371.0	1,374.0	1,394.0	1,419.0	1,424.0	1,426.0	1,433.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	**Naphtha**	CFR Japan	558.0	563.5	602.0	579.0	574.0	485.0	484.5	399.5	493.5	583.1
	Change, %			*(1.0)*	*(7.3)*	*(3.6)*	*(2.8)*	*15.1*	*15.2*	*39.7*	*13.1*	*(4.3)*
	Ethylene	CFR SE Asia	1,187.5	1,165.0	1,230.0	1,200.0	1,130.0	1,140.0	990.0	1,040.9	1,090.9	1,240.8
	Change, %			*1.9*	*(3.5)*	*(1.0)*	*5.1*	*4.2*	*19.9*	*14.1*	*8.9*	*(4.3)*
	Propylene	CFR SE Asia	985.0	1,005.0	1,015.0	845.0	775.0	980.0	815.0	705.7	823.6	1,058.3
	Change, %			*(2.0)*	*(3.0)*	*16.6*	*27.1*	*0.5*	*20.9*	*39.6*	*19.6*	*(6.9)*
	Butadiene	CFR SE Asia	1,375.0	1,370.0	1,350.0	1,050.0	950.0	2,550.0	2,100.0	1,116.8	1,481.1	1,296.7
	Change, %			*0.4*	*1.9*	*31.0*	*44.7*	*(46.1)*	*(34.5)*	*23.1*	*(7.2)*	*6.0*
	Benzene	CFR SE Asia	905.0	925.0	947.5	892.5	817.5	960.0	822.5	646.7	838.8	922.2
	Change, %			*(2.2)*	*(4.5)*	*1.4*	*10.7*	*(5.7)*	*10.0*	*39.9*	*7.9*	*(1.9)*
	Toluene	CFR SE Asia	750.0	750.0	765.0	715.0	705.0	735.0	690.0	630.5	689.5	752.8
	Change, %			*0.0*	*(2.0)*	*4.9*	*6.4*	*2.0*	*8.7*	*19.0*	*8.8*	*(0.4)*
	Xylene	CFR SE Asia	762.5	760.0	765.0	695.0	662.5	730.0	675.0	627.7	668.8	752.2
	Change, %			*0.3*	*(0.3)*	*9.7*	*15.1*	*4.5*	*13.0*	*21.5*	*14.0*	*1.4*
Spread	**Ethylene**	-Naphtha	629.5	601.5	628.0	621.0	556.0	655.0	505.5	641.4	597.4	657.8
	Change, %			*4.7*	*0.2*	*1.4*	*13.2*	*(3.9)*	*24.5*	*(1.9)*	*5.4*	*(4.3)*
	Propylene	-Naphtha	427.0	441.5	413.0	266.0	201.0	495.0	330.5	306.2	330.1	475.3
	Change, %			*(3.3)*	*3.4*	*60.5*	*112.4*	*(13.7)*	*29.2*	*39.5*	*29.4*	*(10.2)*
	Butadiene	-Naphtha	817.0	806.5	748.0	471.0	376.0	2,065.0	1,615.5	717.3	987.6	713.6
	Change, %			*1.3*	*9.2*	*73.5*	*117.3*	*(60.4)*	*(49.4)*	*13.9*	*(17.3)*	*14.5*
	Benzene	-Naphtha	347.0	361.5	345.5	313.5	243.5	475.0	338.0	247.2	345.3	339.2
	Change, %			*(4.0)*	*0.4*	*10.7*	*42.5*	*(26.9)*	*2.7*	*40.4*	*0.5*	*2.3*
	Toluene	-Naphtha	192.0	186.5	163.0	136.0	131.0	250.0	205.5	231.0	196.0	169.7
	Change, %			*2.9*	*17.8*	*41.2*	*46.6*	*(23.2)*	*(6.6)*	*(16.9)*	*(2.0)*	*13.1*
	Xylene	-Naphtha	204.5	196.5	163.0	116.0	88.5	245.0	190.5	228.2	175.3	169.2
	Change, %			*4.1*	*25.5*	*76.3*	*131.1*	*(16.5)*	*7.3*	*(10.4)*	*16.6*	*20.9*

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

SK Energy Daily

에너지/Commodity/정유화학, 손지우 I 3773-8827, jwshon@sk.com
R.A. 유승우 I 3773-9180, yswbest@sk.com

SK 증권

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	**HDPE**	CFR SE Asia	1,297.5	1,282.5	1,272.5	1,207.5	1,187.5	1,172.5	1,142.5	1,134.6	1,142.5	1,250.6
	Change, %			*1.2*	*2.0*	*7.5*	*9.3*	*10.7*	*13.6*	*14.4*	*13.6*	*3.8*
	MEG	CFR SE Asia	1,025.0	1,027.5	1,027.5	917.5	902.5	822.5	847.5	660.8	850.6	1,018.3
	Change, %			*(0.2)*	*(0.2)*	*11.7*	*13.6*	*24.6*	*20.9*	*55.1*	*20.5*	*0.7*
	PVC	CFR SE Asia	980.0	980.0	925.0	850.0	890.0	940.0	920.0	823.4	899.9	941.1
	Change, %			*0.0*	*5.9*	*15.3*	*10.1*	*4.3*	*6.5*	*19.0*	*8.9*	*4.1*
	PP	CFR SE Asia	1,307.5	1,278.5	1,267.5	1,147.5	1,127.5	1,142.5	1,032.5	978.4	1,099.6	1,247.3
	Change, %			*2.3*	*3.2*	*13.9*	*16.0*	*14.4*	*26.6*	*33.6*	*18.9*	*4.8*
	2-EH	CFR Korea	1,125.0	1,080.0	1,060.0	1,030.0	1,000.0	1,020.0	865.0	772.4	970.0	1,072.8
	Change, %			*4.2*	*6.1*	*9.2*	*12.5*	*10.3*	*30.1*	*45.7*	*16.0*	*4.9*
	ABS	CFR SE Asia	2,120.0	2,060.0	2,060.0	2,000.0	1,890.0	1,920.0	1,635.0	1,347.1	1,844.7	2,050.0
	Change, %			*2.9*	*2.9*	*6.0*	*12.2*	*10.4*	*29.7*	*57.4*	*14.9*	*3.4*
	SBR	CFR SE Asia	1,750.0	1,800.0	1,755.0	1,640.0	1,570.0	2,910.0	2,000.0	1,483.0	1,980.5	1,724.4
	Change, %			*(2.8)*	*(0.3)*	*6.7*	*11.5*	*(39.9)*	*(12.5)*	*18.0*	*(11.6)*	*1.5*
	SM	CFR SE Asia	1,452.5	1,442.5	1,435.0	1,327.5	1,195.0	1,395.0	1,205.0	1,064.6	1,253.8	1,412.2
	Change, %			*0.7*	*1.2*	*9.4*	*21.5*	*4.1*	*20.5*	*36.4*	*15.9*	*2.9*
	Caustic	FOB NEA	590.0	571.0	549.0	705.0	651.0	436.0	422.5	316.6	491.2	575.8
	Change, %			*3.3*	*7.5*	*(16.3)*	*(9.4)*	*35.3*	*39.6*	*86.4*	*20.1*	*2.5*
	PX	CFR SE Asia	957.5	970.0	972.5	902.5	872.5	902.5	855.0	790.4	844.4	955.8
	Change, %			*(1.3)*	*(1.5)*	*6.1*	*9.7*	*6.1*	*12.0*	*21.1*	*13.4*	*0.2*
	PO	CFR China	1,962.5	1,955.0	1,892.5	1,732.5	1,872.5	1,412.5	1,562.5	1,396.8	1,601.2	1,946.7
	Change, %			*0.4*	*3.7*	*13.3*	*4.8*	*38.9*	*25.6*	*40.5*	*22.6*	*0.8*
	Caprolactam	CFR SE Asia	2,130.0	2,060.0	2,070.0	2,020.0	2,170.0	2,320.0	1,850.0	1,344.9	1,936.4	2,053.3
	Change, %			*3.4*	*2.9*	*5.4*	*(1.8)*	*(8.2)*	*15.1*	*58.4*	*10.0*	*3.7*
	PTA	CFR SE Asia	790.0	790.0	765.0	715.0	670.0	692.5	642.5	613.7	667.8	766.7
	Change, %			*0.0*	*3.3*	*10.5*	*17.9*	*14.1*	*23.0*	*28.7*	*18.3*	*3.0*
Spread	**HDPE**		739.5	719.0	670.5	628.5	613.5	687.5	658.0	735.1	649.0	667.5
	Change, %			*2.9*	*10.3*	*17.7*	*20.5*	*7.6*	*12.4*	*0.6*	*13.9*	*10.8*
	MEG		467.0	464.0	425.5	338.5	328.5	337.5	363.0	261.3	357.1	435.3
	Change, %			*0.6*	*9.8*	*38.0*	*42.2*	*38.4*	*28.7*	*78.7*	*30.8*	*7.3*
	PVC		422.0	416.5	323.0	271.0	316.0	455.0	435.5	423.9	406.4	358.1
	Change, %			*1.3*	*30.7*	*55.7*	*33.5*	*(7.3)*	*(3.1)*	*(0.4)*	*3.8*	*17.9*
	PP		749.5	715.0	665.5	568.5	553.5	657.5	548.0	578.9	606.1	664.3
	Change, %			*4.8*	*12.6*	*31.8*	*35.4*	*14.0*	*36.8*	*29.5*	*23.7*	*12.8*
	2-EH		567.0	516.5	458.0	451.0	426.0	535.0	380.5	372.9	476.5	489.7
	Change, %			*9.8*	*23.8*	*25.7*	*33.1*	*6.0*	*49.0*	*52.1*	*19.0*	*15.8*
	ABS		1,562.0	1,496.5	1,458.0	1,421.0	1,316.0	1,435.0	1,150.5	947.6	1,351.2	1,466.9
	Change, %			*4.4*	*7.1*	*9.9*	*18.7*	*8.9*	*35.8*	*64.8*	*15.6*	*6.5*
	SBR	BD spread	375.0	430.0	405.0	590.0	620.0	360.0	(100.0)	366.2	499.4	427.8
	Change, %			*(12.8)*	*(7.4)*	*(36.4)*	*(39.5)*	*4.2*	*(475.0)*	*2.4*	*(24.9)*	*(12.3)*
	SM		894.5	879.0	833.0	748.5	621.0	910.0	720.5	665.1	760.3	829.2
	Change, %			*1.8*	*7.4*	*19.5*	*44.0*	*(1.7)*	*24.1*	*34.5*	*17.7*	*7.9*
	Caustic											
	Change, %											
	PX		399.5	406.5	370.5	323.5	298.5	417.5	370.5	390.9	351.0	372.8
	Change, %			*(1.7)*	*7.8*	*23.5*	*33.8*	*(4.3)*	*7.8*	*2.2*	*13.8*	*7.2*
	PO	propylene sprea	977.5	950.0	877.5	887.5	1,097.5	432.5	747.5	691.1	777.6	888.3
	Change, %			*2.9*	*11.4*	*10.1*	*(10.9)*	*126.0*	*30.8*	*41.4*	*25.7*	*10.0*
	Caprolactam	benzene spread	1,225.0	1,135.0	1,122.5	1,127.5	1,352.5	1,360.0	1,027.5	698.2	1,097.6	1,131.1
	Change, %			*7.9*	*9.1*	*8.6*	*(9.4)*	*(9.9)*	*19.2*	*75.5*	*11.6*	*8.3*
	PTA	px spread	119.8	111.0	84.3	83.3	59.3	60.8	44.0	60.4	76.7	97.6
	Change, %			*7.9*	*42.1*	*43.8*	*102.1*	*97.1*	*172.2*	*98.2*	*56.1*	*22.7*

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

에너지/Commodity/정유화학. 손지우 I 3773-8827, jwshon@sk.com
R.A. 유승우 I 3773-9180, yswbest@sk.com

SK 증권

Global peers

	Currency	03/09	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	72.2	2.3	5.6	4.0	2.1	11.4	13.7	1.4	168,245	17.7	14.9	1.8	1.7	10.2	9.2
Eastman	USD	109.3	3.2	8.5	15.3	18.6	28.8	40.9	18.0	13,550	11.6	10.7	2.5	2.2	8.7	8.1
BASF	EUR	85.1	0.1	2.1	(0.5)	(9.4)	1.2	(5.7)	(7.2)	101,214	14.6	13.6	2.4	2.2	7.8	7.4
Akzo Nobel	EUR	80.6	(0.3)	5.6	6.2	8.5	3.1	10.7	10.3	22,073	17.0	15.8	3.0	2.8	9.3	8.8
Arkema	EUR	108.8	0.7	4.6	12.3	7.2	15.6	21.6	7.1	9,270	13.2	12.2	1.7	1.6	6.3	6.0
Lanxess	EUR	68.9	(0.1)	5.6	4.4	9.4	9.6	8.7	4.0	7,282	15.5	13.1	2.1	1.9	9.3	8.2
Sumitomo Chemical	JPY	617	1.5	(2.2)	(6.5)	(21.4)	(5.7)	(5.2)	(23.8)	11,911	10.1	10.5	1.3	1.2	7.4	8.0
Mitsubishi Chemical	JPY	1,039	1.2	(1.9)	(2.2)	(16.3)	2.3	16.7	(16.0)	16,544	9.2	8.7	1.3	1.2	6.3	6.1
Shin-Etsu Chemical	JPY	10,980	1.4	2.8	(2.1)	(7.8)	14.5	14.3	(4.1)	43,948	18.5	16.6	1.9	1.8	8.1	7.4
Asahi Kasei	JPY	1,357	3.5	3.5	3.5	(5.4)	6.3	26.7	(6.6)	18,109	14.4	13.6	1.5	1.4	7.4	7.0
JSR	JPY	2,501	(0.2)	0.6	2.9	10.8	19.3	28.5	12.8	4,455	14.5	13.4	1.2	1.1	7.7	7.2
Nitto Denko	JPY	8,618	0.2	1.3	2.0	(17.2)	(8.0)	(5.0)	(13.9)	15,450	15.7	14.6	2.1	1.9	7.3	7.0
SABIC	SAR	108.2	0.0	3.3	3.9	6.6	8.6	12.1	6.7	80,773	14.2	13.7	1.7	1.7	7.3	7.1
Yansab	SAR	68.3	0.0	1.0	7.6	14.9	21.1	17.3	15.8	8,861	13.7	13.9	2.2	1.9	9.0	8.9
Formosa Plastics	TWD	101.5	0.0	1.0	3.8	9.1	4.6	14.7	2.8	21,114	14.4	13.9	1.8	1.8	18.9	19.2
Formosa Fiber	TWD	105.5	0.0	0.5	0.0	11.8	10.0	13.8	2.4	20,511	13.7	13.4	1.7	1.7	11.6	11.5
Nan Ya Plastics	TWD	79.3	0.4	1.3	4.3	6.4	5.0	13.0	1.8	20,648	14.8	15.3	1.7	1.7	16.2	16.4
Sinopec Shanghai	CNY	5.92	0.2	1.7	(2.8)	(8.6)	(6.9)	(9.6)	(6.5)	9,462	12.0	12.6	2.2	2.0	6.8	7.3
Sinopec Yizheng(Fibe	CNY	2.32	0.4	1.3	5.0	(18.6)	(27.5)	(39.7)	(13.1)	5,394	50.4	66.3	5.3	5.0	13.9	10.3
Reliance	INR	913	0.2	(3.7)	1.7	(0.9)	11.8	41.9	0.4	93,404	14.4	12.9	1.7	1.5	9.4	8.7
Industries Qatar	QAR	94.0	0.0	(9.7)	(9.0)	6.2	6.2	(17.4)	(3.1)	16,144	14.5	13.9	1.6	1.5	46.4	27.2
PTT Chemical	THB	95.0	2.2	(4.0)	3.5	15.5	23.0	31.9	11.8	11,766	10.7	10.4	1.4	1.3	5.5	5.4
Petronas	MYR	8.0	0.3	(1.5)	(0.2)	7.5	7.1	8.3	3.6	15,624	16.1	15.5	2.0	1.9	9.2	8.9
LG화학	KRW	406,500	5.0	6.0	11.1	2.0	9.1	50.8	0.4	27,313	13.8	12.8	1.8	1.6	6.5	6.1
롯데케미칼	KRW	429,500	(1.0)	(9.5)	2.6	20.3	6.4	16.7	16.7	11,632	5.5	5.2	0.9	0.8	3.6	3.3
한화케미칼	KRW	31,300	0.8	(2.8)	(3.2)	4.7	(12.2)	27.2	(0.9)	5,050	5.7	5.5	0.8	0.7	6.7	6.5
금호석유	KRW	90,600	(1.0)	1.2	0.1	5.1	15.1	25.5	(8.9)	2,969	14.1	11.9	1.6	1.5	9.3	8.4
SKC	KRW	39,400	0.6	2.2	7.9	(2.8)	2.1	31.8	(16.2)	1,643	9.9	8.7	1.1	1.0	8.8	7.9
국도화학	KRW	59,200	0.0	(4.8)	1.2	(10.8)	17.2	18.6	(6.2)	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	9,570	5.9	3.9	7.6	25.1	45.0	20.7	26.3	4,595	8.2	7.3	1.1	1.0	7.2	6.8
Average			**0.9**	**0.8**	**2.8**	**2.4**	**8.1**	**14.8**	**0.5**							
Refinery																
Valero	USD	94.3	1.1	2.3	6.9	7.7	35.6	41.9	2.6	40,608	14.1	13.4	2.0	2.0	6.9	6.9
Conoco Phillips	USD	55.1	2.8	1.8	5.8	6.8	23.8	18.5	0.3	66,136	34.0	25.9	2.2	2.2	7.2	6.7
Formosa Petrochemic	TWD	113.5	(0.9)	0.9	(2.2)	5.1	6.1	9.1	(1.7)	37,040	18.2	18.7	3.2	3.2	11.7	12.1
Andeavor	USD	102.2	1.7	11.0	5.0	(8.0)	0.6	25.0	(10.7)	17,904	12.9	11.4	1.8	1.7	7.3	7.1
Marathon Petroleum	USD	70.2	1.7	7.7	10.0	8.4	31.4	42.5	6.4	32,812	15.0	12.8	2.6	2.7	7.7	7.5
Devon Energy	USD	32.7	1.0	4.3	(5.7)	(14.0)	4.0	(19.7)	(21.0)	22,192	17.5	14.0	2.7	2.3	8.4	7.4
Hollyfrontier	USD	46.5	2.7	5.5	4.5	1.8	43.6	72.2	(9.2)	9,094	16.8	15.2	1.8	1.8	8.0	8.0
Phillips 66	USD	95.9	0.8	5.0	3.6	(3.7)	13.2	24.8	(5.2)	51,561	15.6	14.5	2.3	2.2	9.0	8.8
Murphy Oil	USD	25.3	2.4	(4.1)	(3.9)	(11.0)	7.9	(5.0)	(18.5)	5,548	162.4	113.2	1.2	1.1	4.9	4.5
JX Holdings	JPY	645.5	0.2	0.1	(1.7)	(1.7)	20.7	16.3	(11.2)	22,130	8.8	8.0	0.9	0.9	7.0	6.6
Idemitsu	JPY	4,055.0	(1.5)	1.2	5.7	2.9	45.7	5.6	(10.4)	8,360	7.9	7.5	1.0	0.9	6.8	6.8
Nesteoil	EUR	59.5	(1.5)	3.9	3.0	16.7	65.2	76.4	11.6	16,473	16.7	16.7	2.9	2.7	10.2	10.3
Ashland	USD	72.6	0.7	4.0	4.1	3.5	17.8	23.8	2.0	4,550	21.6	18.7	1.3	1.3	10.2	9.6
Fuchs Petrolub	EUR	47.8	0.3	4.3	9.8	9.0	(1.0)	10.5	8.1	7,127	22.1	20.9	4.1	3.7	13.0	12.3
SK이노베이션	KRW	204,500	1.0	(1.4)	10.5	0.7	9.7	32.8	0.0	17,975	7.9	7.7	0.9	0.9	4.9	4.8
S-Oil	KRW	122,000	0.8	(3.2)	7.5	2.5	0.8	40.4	4.3	12,400	9.3	8.1	1.8	1.6	7.6	6.6
GS	KRW	65,800	1.2	0.9	3.9	9.3	(1.3)	22.5	5.8	5,467	6.0	5.5	0.7	0.6	6.9	6.3
Average			**0.9**	**2.6**	**3.9**	**2.1**	**19.0**	**25.7**	**(2.7)**							

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

SK Energy Daily

에너지/Commodity/정유화학. 손지우 I 3773-8827, jwshon@sk.com
R.A. 유승우 I 3773-9180, yswbest@sk.com

SK 증권

Global peers

	Currency	03/09	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	75	0.6	(1.3)	(1.6)	(9.8)	(5.4)	(8.7)	(10.9)	315,945	15.9	16.2	1.7	1.6	7.5	7.4
BP	GBP	478	0.7	3.0	1.7	(3.0)	7.2	5.3	(8.5)	131,946	14.8	13.9	1.3	1.3	5.2	5.0
Shell	EUR	2,262	(0.2)	0.5	0.8	(4.1)	5.8	8.2	(8.8)	262,692	13.1	12.2	1.3	1.3	5.8	5.5
Chevron	USD	117	3.4	5.0	3.3	(2.3)	5.8	6.5	(6.4)	223,920	19.0	18.7	1.5	1.5	6.6	6.5
Total	EUR	46	0.1	2.1	3.9	(1.2)	5.6	(0.7)	0.9	145,144	12.2	11.8	1.2	1.2	5.2	4.9
Sinopec	CNY	6	(0.9)	0.9	0.2	6.0	7.2	14.1	4.2	117,216	11.9	11.2	1.0	1.0	4.4	4.3
Petrochina	CNY	8	0.0	0.9	1.0	(0.4)	(0.6)	0.9	(0.7)	219,636	27.4	15.2	1.2	1.1	5.8	5.1
CNOOC	CNY	11	0.2	0.9	3.4	3.6	(3.3)	(16.3)	2.9	64,261	9.0	8.8	1.0	0.9	3.6	3.5
Gazprom	RUB	140	0.9	0.9	3.1	5.4	16.2	8.4	7.1	58,366	3.8	3.9	0.3	0.2	3.6	3.5
Rosneft	RUB	313	(0.6)	(2.0)	(3.5)	6.6	(0.5)	(1.8)	7.5	58,544	7.3	6.5	0.8	0.7	4.6	4.2
Anadarko	USD	58	1.7	1.0	3.4	21.1	41.8	(6.3)	8.2	30,900	46.3	38.6	2.2	2.2	6.3	5.7
Petrobras	BRL	22	3.2	4.1	19.3	45.9	52.2	54.4	39.1	93,430	11.1	8.8	1.0	0.8	5.5	5.1
Lukoil	USD	3,789	1.8	1.1	4.7	11.8	29.5	27.6	13.6	56,307	6.2	6.2	0.8	0.7	N/A	N/A
Kinder	USD	16	2.0	1.4	(5.3)	(8.2)	(14.7)	(23.2)	(9.6)	47,497	20.1	18.2	1.1	1.1	10.2	9.8
Statoil	NOK	178	0.2	1.9	3.3	6.9	20.9	23.1	1.8	76,166	15.5	14.7	1.8	1.7	3.5	3.3
BHP	AUD	28	(1.7)	(4.4)	(2.8)	4.2	3.8	18.2	(4.2)	113,333	15.2	16.2	1.9	1.9	6.0	6.1
PTT E&P	THB	114	0.9	(1.3)	1.3	21.4	26.1	26.8	13.5	14,386	13.1	12.5	1.1	1.1	3.7	3.5
Petronas gas	MYR	17	0.0	(0.1)	(0.5)	8.7	(4.3)	(11.6)	(0.5)	8,837	18.2	17.8	2.6	2.6	10.2	10.0
Chesapeake	USD	3	4.4	4.7	8.8	(15.8)	(14.8)	(39.6)	(21.7)	2,819	3.9	3.9	#N/A N/A	3.9	6.0	5.8
Noble Energy	USD	31	1.3	2.1	21.0	15.4	26.2	(10.3)	6.7	15,297	41.5	27.2	1.5	1.4	7.5	6.4
Average		**0**	**0.9**	**1.1**	**3.3**	**5.6**	**10.2**	**3.8**	**1.7**							
PV																
WACKER	EUR	137.3	1.7	5.4	(1.3)	(3.9)	23.6	32.3	(15.4)	8,820	19.3	17.1	2.1	2.0	6.8	6.5
GCL-Poly	HKD	1.2	4.2	(0.8)	6.0	(2.4)	38.2	21.8	(12.1)	2,918	6.7	5.9	0.7	0.6	5.5	5.0
SunPower	USD	7.2	(3.8)	(0.4)	4.5	(14.1)	(16.6)	(1.0)	(15.1)	1,002	#N/A N/A	#N/A N/A	7.9	9.9	12.5	8.2
Canadian Solar	USD	16.2	(1.6)	2.1	8.7	(6.1)	(0.7)	21.9	(4.0)	939	8.4	9.3	0.9	0.8	8.8	9.3
JA Solar	USD	7.4	0.1	(0.1)	(0.3)	0.0	(3.9)	57.4	(0.4)	354	14.1	11.8	1.6	1.6	4.0	3.6
Yingli	USD	1.7	4.9	3.6	15.1	(14.1)	(26.3)	(24.7)	1.2	31	#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	67.9	0.3	5.5	10.9	(3.0)	44.7	109.1	0.6	7,094	41.5	20.7	1.3	1.2	11.9	6.9
한화큐셀	USD	8.0	(2.6)	(3.0)	13.5	9.7	8.1	3.0	14.1	667	36.4	25.8	#N/A N/A	#N/A N/A	8.4	7.6
OCI	KRW	155,500	(0.3)	(5.2)	1.3	29.0	54.0	87.1	14.3	3,478	0.0	14.5	0.0	1.0	0.0	7.0
웅진에너지	KRW	7,190	2.3	0.3	(0.1)	(19.6)	(22.9)	44.5	(12.5)	200	N/A	0.0	1.0	0.0	7.0	0.0
신성솔라에너지	KRW	1,795	1.7	(1.1)	(0.6)	(10.0)	(12.2)	(6.0)	(6.3)	291	N/A	1.0	0.0	7.0	0.0	8.2
Average			**0.6**	**0.6**	**5.3**	**(3.1)**	**7.8**	**31.4**	**(3.2)**							
Gas Company																
Towngas China	HKD	6.2	(0.8)	(2.5)	3.7	2.1	18.3	34.2	(1.3)	2,190	12.7	11.5	1.1	1.0	11.1	10.2
Kulun	HKD	7.1	1.4	(1.1)	0.8	(1.0)	(5.1)	4.4	(12.3)	7,354	9.6	8.5	1.1	1.0	5.3	5.0
Beijing Enterprise	HKD	43.9	2.6	3.1	4.8	(2.1)	2.0	6.4	(5.5)	7,061	7.7	6.9	0.8	0.7	13.2	12.9
ENN Energy	HKD	61.4	0.8	0.9	1.6	9.4	12.9	42.8	10.0	8,489	13.7	11.7	2.6	2.3	8.4	7.3
China Resources Gas	HKD	26.2	1.2	(1.1)	4.6	(9.8)	(4.7)	(1.5)	(7.8)	7,421	13.8	12.4	2.4	2.1	8.1	7.5
China Gas Holdings	HKD	23.8	(0.4)	(2.1)	4.4	(1.0)	9.7	90.3	10.0	15,057	16.3	13.8	4.0	3.3	12.7	11.0
Shenzen Gas	HKD	15.5	(0.3)	(2.0)	5.6	10.5	8.8	38.8	4.3	4,024	10.7	9.9	1.3	1.2	7.8	7.8
Shann Xi	CNY	7.5	0.5	1.8	6.3	(6.6)	(13.6)	(22.3)	(11.4)	1,313	14.2	16.1	1.4	1.3	#N/A N/A	#N/A N/A
Suntien	HKD	2.0	1.5	6.5	14.5	6.5	9.4	35.9	(4.8)	934	5.8	5.1	0.6	0.6	8.2	7.1
China Oil & Gas	HKD	0.7	0.0	(4.3)	(1.5)	15.5	17.5	9.8	(21.2)	498	10.3	8.9	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Average			**0.7**	**(0.1)**	**4.5**	**2.3**	**5.5**	**23.9**	**(4.0)**							
EV																
LG화학	KRW	406,500	5.0	6.0	11.1	2.0	9.1	50.8	0.4	26,912	14.2	13.2	1.7	1.6	6.5	6.0
삼성SDI	KRW	196,500	8.0	15.2	15.6	(6.2)	2.1	54.1	(3.9)	12,672	14.6	11.2	1.1	1.0	12.7	10.3
Panasonic	JPY	1635.0	1.5	0.9	3.2	2.4	11.3	28.9	(0.9)	37,547	15.7	13.5	2.1	1.9	6.0	5.6
GS Yuasa	JPY	575.0	0.5	1.4	0.3	3.0	8.3	6.5	2.5	2,226	16.4	14.7	1.3	1.2	7.1	6.5
NEC	JPY	3205.0	0.5	0.8	3.1	6.3	12.1	13.7	5.4	7,815	21.5	15.1	0.9	0.9	6.9	6.2
BYD Auto	CNY	65.6	1.0	4.3	15.7	9.7	31.6	30.7	0.8	27,429	28.1	22.4	2.9	2.6	13.1	11.6
Tesla Motors	USD	327.2	(0.6)	(2.4)	5.4	3.8	(4.7)	33.6	5.1	55,266	#N/A N/A	138.6	12.0	10.8	46.7	18.5
Kandi Technologies	USD	5.3	1.4	2.4	6.6	(27.7)	37.0	30.2	(22.4)	253	#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			**2.2**	**3.6**	**7.6**	**(0.8)**	**13.3**	**31.1**	**(1.6)**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임