

2008 NPRA REPORT

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Marubeni

C h e m i c a l s G r o u p

13. CAUSTIC SODA

USA

SUPPLY:

The average operation rate in 2007 was increased to 91.6% compared to 90.25% in 2006, and production volume was 13,434KDST which was up by 3% from last year. Increased volume was actually sold for stable domestic market and Latin America. In addition to the forecast of export increase, the impact of expansion by SHINTECH (capacity: 330KDMT p.a.) will not give big influence on the market due to the change from I-M chlor-alkali to KOH by OXY (capacity: 200KDMT p.a.), so domestic supply and demand balance in 2008 will be tighter.

DEMAND:

Although there are some causes like the economic slowdown and the demand decrease due to sharp price increase, the whole demand will be stable because the demand for water treatment will be increased seasonally from now and the demand for Latin America (for Alumina) is also still increased.

PRICE:

The price increase by US\$50/DST was penetrated in the market in early 2008, and recent spot domestic price is US\$530-540/DST FOB. In addition to the forecast that US\$80/DST increase which was announced in February 2008 will be nearly effective in April 2008, some manufacturers started to study next price increase in 2Q.

On the other hand, the competitive flow from F.E. Asia into the West Coast is making this area different from the East Coast and Gulf area in points of price trend and process of price negotiation. This situation will probably last for some time, so the West Coast market will continue to be under influence from Far East Asia market.

EUROPE

SUPPLY:

The supply and demand balance in Europe is still tight, and the total inventory level has been less than 300KDMT from May 2007 which is usually deemed a normal level. The production rate will be up due to PVC-based chlorine demand increase; however, the balance of Europe will be kept tight because there are still much inquiry from North and Latin America.

DEMAND:

The demand for caustic soda in Europe is stable, and it will further increase from 2Q onwards seasonally.

PRICE:

INEOS announced a price increase by Euro45/DMT at the end of February 2008, and subsequently BAYER, DOW and VINNOLIT announced by Euro50/DMT, and AKZO also did

by Euro60/DMT. Some manufacturers have not officially announced price increase yet, however, all manufacturers are in aggressive negotiation to realize this price increase from 2Q onwards when the supply become tighter in the season of concentrated annual shutdowns.

ASIA

SUPPLY:

In Japan, there remains the after-effect of a fire accident in MITSUBISHI CHEMICAL Ethylene plant at Kashima, east side of Japan last December, which continues to make Kashima Chlor Alkali plant reduces the operation rate. What is more, from April to June, some scheduled turnarounds will be implemented. In South East Asia, major suppliers which usually have enough cargo for export; ASAHIMAS and SULFINDO have a scheduled turnaround in May. In consequence, the supply and demand balance of 1H/2008 in Asia will stay tight.

Tosoh will increase electrolysis plant this June, by 150KDMT, but surplus quantity, if any, will be absorbed easily by allotting it, to fulfill the deferred contracts for Alumina in Australia. Spot cargo availability will continue to be limited in this year.

DEMAND:

The demand in Asia is steadily growing as a whole. In China major industries which consume caustic soda, Chemicals, Textile, Pulp and Paper are growing. What is more, the demand from Alumina is expanding. In South East Asia, the demand is increasing by at least 5%. In India, Alumina manufactures will be obliged to import caustic soda around 200KDMT in 2008 to cover their demand. They will increase import mainly from ASEAN area and China due to the freight cost.

Now in the market, there is a rumor that China government has a plan to impose exporting tax on caustic soda by 5-10%. If so, China will limit export quantity, and it will lead to much higher price market in this area.

PRICE:

On the last working day 2007, the Alumina contract price was finally agreed at US\$300/DMT on the base of FOB. The spot price continues to go to higher level; present price on the base of FOB is US\$350-370/DMT FOB. Price will be higher due to the continuous tight balance, limited spot cargo availability and the expectation of higher Alumina contract price for 2H/2008.

14. EDC

Price forecast

		Apr	May	Jun	3Q (Jul-Sep)	4Q (Oct-Dec)
U S A	SPOT	FOB ¢ 15-17 /LB	FOB ¢ 15-17 /LB	FOB ¢ 16-18 /LB	→	→
	SPOT	CIF US\$ 410-420 /MT	CIF US\$ 410-430 /MT	CIF US\$ 410-430 /MT	→	→

USA

SUPPLY & DEMAND:

With the firm market of Caustic soda, manufactures of Caustic Soda have kept their operating rate high. However because of high price level of ethylene, the margin of EDC production is not at reasonable level for manufactures. So they are not in position to produce EDC positively. Export activity from USA to Asia is continued regularly, but it is mainly to implement long term fixed contracts. SPOT trading are limited cases, caused by occasional operating adjustment of VCM production.

PRICE:

Current price level for export ex USG is in the range of 15-17ct/lb (US\$330-380/MT FOB). It seems less than their normal production cost. However suppliers keep their operation supported by the good return from buoyant Caustic Soda.

EUROPE

SUPPLY & DEMAND:

Though some manufactures, for example INEOS/Wilhelshaven and VESTLIT/Marlm faced mechanical troubles in their VCM/Electrolysis unit, the supply situation of EDC is kept firm. Besides the regular shipments under term contracts, it seemed that DOW/Stade supplied about 15KMT EDC to Asia. Since the closure of DOW's TDI unit (Italy, Porto Marghera), Synsial was obliged to cut their operation by half, but in February, they got an approval for full operation therefore they will be back in position to operate EDC in full depending on the market situation.

PRICE:

Because of cost push from the price hike of ethylene, EDC manufactures are facing difficulties to keep normal margin. To make the matter worse the recovery of European PVC demand is delaying, as the result there seemed so far less active transaction in European market this year. The current price level seems to be around US\$380-420/MT FOB.

ASIA

SUPPLY & DEMAND:

FPC/Taiwan has reduced their VCM operation for their annual maintenance in March, so they are in position to supply some EDC additionally. Besides, there is regular inflow of US material from USG to Asia. However, at the moment EDC supply-demand in Asia is well balanced because of active requirement for non-vinyl sector in China, and additional demands from TIANJIN DAGU and SINPU CHEMICAL which are created under the soft ethylene market in Asia and which become now viable under the expanded price gap between EDC and VCM. What is more, by the same reason CANGZHOU CHEMICAL also resumed import of EDC this year, and there is also high demand from VCM SB and India backed by the firm PVC demand there.

On the other hand, Tosoh will start to operate their additional electrolysis line, 150KDMT, in coming June, and then their EDC import requirement will be reduced sharply.

PRICE:

For the time being, Asian EDC buyers are limited in number; therefore the price in Asia is kept in order. The price for March shipment is fixed around US\$410-420/MT CFR. There is quite big price gap between EDC and VCM, more than US\$400/MT, so that, as long as such a gap exists, such positive procurement, especially by Chinese buyer, will be continued.

15. VCM

Price forecast

		Apr	May	Jun	3Q (Jul-Sep)	4Q (Oct-Dec)
U S A	SPOT	FOB US\$ 800-830 /MT	FOB US\$ 780-830 /MT	FOB US\$ 780-830 /MT	↗	↘
	SPOT	CIF US\$ 880-900 /MT	CIF US\$ 890-930 /MT	CIF US\$ 900-940 /MT	→	↘

USA

SUPPLY&DEMAND:

There is no significant sign of demand recovery of PVC, especially in housing sector. So VCM demand in USA is still weak in this quarter. Meanwhile during 1H/2008, PEMEX/Mexico, and DOW/Freeport has annual shutdown, and GEORGIA GULF/Lake Charles continues to stop their operation after the plant fire occurred in November 2007. In consequence, it seems that the balance between supply and demand is kept relatively tight now. The cargo movements from USG to European market is limited, which was seen frequently in the same season last year, due to high feedstock cost and decreasing of surplus cargo in USA.

PRICE:

Price hike of crude oil and ethylene makes both contract prices of in USA and the export price increase respectively. Export price is offered at the range of US\$800-850/MT FOB.

Supply would be improved after finishing turnarounds, but the price will keep the current level supported by the increasing cost.

EUROPE

SUPPLY&DEMAND:

As usual, winter period after Christmas is the low demand season for PVC sector. However, the recovery of PVC demand in 1Q/2008 has made little progress due to the reaction of extraordinary good demand during last summer and autumn. Some of suppliers, for example LVM/Belgium and VESTOLIT/Germany, reduced their production due to annual maintenance and mechanical trouble, but such squeeze in supply did give little influence on supply demand balance because PVC manufactures is obliged to decrease their VCM procurement in order to meet the slow PVC demand. Supply from USG seems limited and not influential.

PRICE:

Contract price in European market seemed in the range of Euro730-750/MT. Some manufactures might be obliged to cut their operation due to the poor margin for vinyl chain. The price of European ethylene in 2Q was increased again.

ASIA**SUPPLY&DEMAND:**

Increasing production of acetylene based cheap PVC in China reduced the import of VCM into the country. The import in 2007 was 870KMT; it was 13% less than that of 2006, 1,000KMT. Most of the import volume was for some limited number of major PVC manufactures, and the number of importer is further decreasing. Meanwhile in the Southeast Asia besides China the VCM demand and supply is well balanced at the moment through the flow of cargoes from East to Southeast to fill the relatively active demand in India and other Southeast Asia, while some VCM plants was obliged to reduce production due to some mechanical troubles.

However, in 2Q, a number of plant turnarounds are scheduled, for example FORMOSA PLASTICS, TOSOH, V-TECH, and KEIYO, then some tighter balance of VCM may appear in the market if the demand keeps the current level.

PRICE:

The VCM price has been increased keeping pace with the price of PVC supported by an active demand in the area. The VCM price for February shipment for China was fixed at US\$810/MT CIF, and for March shipment fixed at US\$850/MT CIF. The price for the Southeast Asia is reported to be around US\$50/MT higher than Chinese prices.

Meantime, the price for China in April shipment is offered at US\$900/MT CIF. It will be soon fixed on this level reflecting the high feedstock cost for suppliers and the price increasing of PVC.

16. PVC

Price forecast

		Apr	May	Jun	3Q (Jul-Sep)	4Q (Oct-Dec)
U S A	CONTRACT	¢ 43-44 /LB	¢ 44-45 /LB	¢ 44-45 /LB	↘	↘
	SPOT	FOB US\$ 880-920 /MT	FOB US\$ 880-920 /MT	FOB US\$ 880-920 /MT	→	→
F E	SPOT	CIF US\$ 880-920 /MT	CIF US\$ 880-920 /MT	CIF US\$ 880-920 /MT	↗	↗

USA

SUPPLY:

In North America, production of PVC was 6,570KMT in 2007 (down 3% from the previous year), and amount of export of PVC was 1,130KMT in 2007 (up 18% from the previous year). In 1Q/2008 PVC operating rates of each maker maintain around 80% on average supported by strong exports to South America and Middle East. And supply and demand in PVC domestic market seems to be well balanced.

Under such circumstances many people showed much concern in the starting up of new plant by SHINTECH/Plaquimine (capacity: 300KMT) in 2Q and in the current topics, shortage of packing equipment for PVC export and also short supply of transport containers in USA.

DEMAND:

Because of protracted financial crisis housing market in the USA is dead calm. And PVC domestic demand comes a lot under the influences of this sinking market.

PRICE:

In January 2008 US\$44/MT increase was accepted. However in February and March because the customers made strong objection against further price raise, the planned price increase seemed not realized yet.

On the other hand, export from USA to Mexico, Brazil, South East, and Egypt are prosperous and export prices seem to be kept high.

Each supplier seems to start offer at about US\$1,010-1,040/MT FOB in April.

EUROPE

SUPPLY:

Due to skyrocketing Ethylene price each supplier is obliged to make adjustment for production and keep PVC supply and demand balance rather tight in Europe. However in future there will be a possibility that competitive materials out of USA, Mexico, Asia will flow in Europe.

DEMAND:

This year the usual recovering of PVC demand in spring has not been seen in Europe yet. In East Europe and part of Russia, the long lasted boom of construction seemed to be over. We need to keep careful eye on ups and down of PVC demand in this region.

PRICE:

In this region recent PVC price level is Euro830-850/MT (US\$1,300-1,350/MT) which is not changed from Jan-Feb, the period of low demand. Taking into consideration much higher C2 price in 2Q, manufacturers announced price increase by Euro15-30/MT for the shipments April onward.

ASIA**SUPPLY:**

In 1Q, PVC Supply was much tighter than usual year, because Shin-Etsu stopped their export due to Ethylene plant trouble occurred in MITSUBISHI CHEMICAL end of last year. In 2Q, PVC supply will continue to remain tight due to annual shutdowns of major suppliers which are planned to be done at more or less same timing this year. In China there will be seen short supply of Acetylene PVC caused by shortage of Carbide supply.

DEMAND:

Asian demand is on the way to recover, especially in China after Chinese New Year. Entering high demand season in 2Q, inquiries from customers are expected to increase, but there is fear that Chinese re-export of PVC products will be affected by US ailing economy.

PRICE:

After Asian market price hit the bottom at US\$950/MT December last year, PVC market price took an up trend and for the March shipment reached US\$1,070-1,090/MT. 2Q price is to be expected to reach US\$1,200/MT level with sharp material cost rise in the back.