

ASIA IS A BUSINESS IMPERATIVE... NOW MORE THAN EVER

ASIAN SPECIALTY CHEMICALS NEWSLETTER

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INTRODUCTION

Asian stock markets are booming. Consolidation of the industry continues apace in Asia as in the rest of the world. Perhaps more suprisingly, new plant investment is also taking place throughout the region.

We hope that you find *Asian Specialty Chemical Newsletter* informative. BDA is a corporate finance advisory firm that helps clients to identify and execute acquisitions and JVs in Asia. If you think that BDA's services may be useful to you, please contact us in New York at (212) 265-5300 or in Singapore at (65) 533-8500.

Euan Rellie
Managing Director

CHINA/HK

BASF, ICI and Nippon Polyurethane Industry of Japan have signed a letter of intent with several Chinese partners to build and operate a 160,000 tpa integrated plant for crude MDI (plus its associated precursor nitrobenzene aniline) in the new Shanghai Chemical Industry Park. Five Chinese partners will be involved in the project: **Shanghai Tianyuan, Shanghai Huayi, Shanghai Chemical Industry Park Development Company, China Petrochemical Group** and **Sinopec Gaoqiao Petrochemical**. (March 11, 1999)

Shanghai Chloralkali and **Solvay SA** of Belgium have signed a letter of intent to study the feasibility of setting up a 40-60% JV to produce and market PVC compounds in China by 2000. The project proposal is expected to be submitted shortly. The venture will initially take over Shanghai Chloralkali's 30,000 tpa PVC compounds facility in Shanghai, and will eventually toll manufacture polyvinyl dichloride (PVDC) blends on behalf of Solvay. (March 1, 1999)

INDIA

Indian Petrochemicals Corp Ltd (IPCL) intends to import propane for co-cracking at its upcoming gas cracker in Gandhar, Gujarat. The 300,000 tpa cracker is slated for commissioning during mid-1999. The cracker will use semi-rich gas source from **Oil and Natural Gas Corp** (the state monopoly) pending the setting up of the Gandhar gas-processing complex by **Gas Authority of India Ltd (Gail)**. IPCL will be

producing relatively more propylene than ethylene during the first year of startup at the new Gandhar cracker. (March 1, 1999)

National Fertilizers and **Tata Chemicals India** may consider a plan by some fertilizer makers to jointly set up a natural gas project that will help them cut production costs, said a spokeswoman of the Ministry of Chemicals and Fertilizers. The Economic Times reported that these companies plan a natural gas project worth Rup210bn (US\$4.9bn). (March 12, 1999)

Oswal Chemicals and Fertilizers has advanced the commissioning of Asia's largest phosphatic fertilizer complex at Paradeep, Orissa, to September 1999 from February 2000. It will have the capacity to produce 1.5 million tpa of diammonium phosphate (DAP) and 420,000 tpa of NPK fertilizers. (February 22, 1999)

Reliance Industries has initiated the first phase of its new 600,000 tpa PP plant in Jamnagar. It expects to begin commercial production in 1H 1999. The facility, part of Reliance's new petrochemical complex at Jamnagar which includes 1.2 million tpa of paraxylene, will boost the company's total PP capacity to nearly 1m tpa. (February 28, 1999)

Reliance Industries has said that all three of its 400,000 tpa PX (paraxylene) plants in Jamnagar will become onstream in Q2 1999. With all three plants running, it will have a surplus capacity of 400,000 tpa. The new facility also includes 150,000 tpa of orthoxylene capacity, which will be sold to the domestic market. (March 1, 1999)

Supreme Petrochem (SP) plans to double the capacity of its PS (polystyrene) facility in Amdoshi, near Nagothane, Maharashtra, India. The Rup1.2bn (US\$28m) expansion will lift capacity to 204,000 tpa from 112,000 tpa and is slated for commissioning by mid-2000. The capacity of the SP facility was expanded from 84,000 tpa to 112,000 tpa through a revamp scheme during August 1998. (March 1, 1999)

If you would like to submit stories to future editions of this newsletter, please contact Paul DiGiacomo in New York on (212) 265-5300 or email pdigiacomo@bdallc.com

INDONESIA

The resumption of **Trans-Pacific Petrochemical Indotama (TPPI)**, a stalled ethylene cracker project, is one of the main targets of the Indonesian government's latest tax incentive package. Projects outside Java and Bali will be allowed a tax holiday for five years. Those in Java and Bali will be offered three years. Projects valued at more than US\$200m will be entitled to an additional year's tax waiver. (February 28, 1999)

JAPAN

Asahi Chemical has suspended its plans for a 100,000 tpa styrene butadiene rubber (SBR) investment in Asia because of the Asian crisis. Singapore and Malaysia were being considered for the site. In Singapore, Asahi was counting on offtaking butadiene feedstock from the **Mobil** cracker. It said talks with Mobil have ceased, and Mobil has also delayed its cracker project to 2003. In Malaysia, Asahi was eyeing **Titan's** cracker complex in Johor for butadiene, but feared the feedstock output may be too small. (March 8, 1999)

Asahi Glass has completed the purchase of JV partner **ICI's** 50% stake in polytetra-fluoroethylene producer **Asahi-ICI Fluoropolymers**. The company will be renamed **Asahi Glass Fluoropolymers**, and is estimated to have annual revenues of ¥6.8bn (US\$60m) (February 28, 1999)

Nippon Kasei Chemical Co has started marketing three new specialty chemicals used in waterborne coating resins. Until recently, Nippon Kasei and **Mitsubishi Chemical Corp**, its largest shareholder, jointly developed specialty chemicals. However, Nippon Kasei executives thought that solo production would strengthen its status within the Mitsubishi Chemical group. The new chemicals are dimethylol butanic acid, dimethylol propionic acid, both used in waterborne urethane resins, and diacetone acrylamine, a material used in acrylic emulsion resins. The firm expects first-year sales of ¥1bn (US\$8m) and ¥3bn (US\$24m) in the third year. (March 18, 1999)

Nippon Shokubai has decided temporarily to close its 44,000 tpa phthalic anhydride (PTA) plant in Hemiji, Japan, at end-March because of weak markets. It may later decide to scrap the plant. It will continue to sell PTA and is discussing term supply from Nippon Steel Chemical. (March 22, 1999)

Sumimoto Chemical and **Mitsui Chemicals** have announced that they will merge their styrene butadiene rubber (SBR) and ABS resin business into a new JV. This will create Japan's third largest ABS producer with a combined capacity of 100,000 tpa, after **Technopolymer** and **Ube Industries**. The ABS industry has been under pressure from falling prices and dampened regional demand because of the economic crisis. (February 28, 1999)

Sumitomo Chemical has boosted caprolactum capacity at its plant in Ehime, Japan, from 78,000 tpa to 85,000 tpa, after debottlenecking. A second phase expansion will further lift capacity to 93,000 tpa at the end of this year. However, Sumitomo has been operating at only 90% of its new capacity due to poor market conditions. (March 1, 1999)

Elf Atochem has agreed to acquire 51% of **Se Ki Catalyst's** equity to gain control of Se Ki's organic peroxide business. Se Ki operates a 2,300 tpa facility at Kyoungnam, near Pusan. Elf currently operates organic peroxide plants in Japan and India. The French firm has already acquired the PMMA (polymethylmethacrylate) business from **Hanwha Chemical Corp** of South Korea. It sees nylon resin demand growing faster in Asia than in Europe. (February 19, 1999)

LG Chemical will this year attempt to sell several of its businesses, as it continues to pursue a strategy of exiting from businesses which deliver poor returns and have poor synergies with core operations. A LGC source said that the divestment will include "other non core chemical operations", but declined to specify which. Observers say LG is expected to seek buyers for its 25,000 tpa epoxy resins facility. (March 1, 1999)

Rhodia of France has acquired the nylon resin business of the **Hyosung Group** to strengthen its nylon business in China and Taiwan, where it has established production bases. (March 19, 1999)

KOREA

Air Products and Chemicals Inc, the US-based industrial gases and chemicals firm, has acquired a majority interest in **Hanyang Technology**, Korea's leading specialty gas equipment manufacturer serving the semiconductor industry. Air Products hopes that the acquisition will enable it to leverage Hanyang's local business and customer knowledge to further expand its regional and worldwide supply capability. Hanyang Tehnology manufactures wet chemical cleaning equipment, specialty gas delivery equipment and ultra-high purity piping systems. (March 1, 1999)

AlliedSignal-Sysko, the new JV chemical fiber company between **Allied Signal** and South Korea's **Sam Yang Corp**, **Kohap Ltd**, and **SK Chemical**, has begun operations. It plans to idle approximately 12,000 tpa of polyester plant and is considering modifying the plant to produce nylon for automobile or other higher-value products. (February 8, 1999)

MALAYSIA

BASF Petronas Chemical Sdn Bhd, a JV between **BASF** and **Petronas**, the Malaysian national oil company, will build a butanediol plant in Malaysia. The plant will have a capacity of 100,000 tpa and will use butane as a feedstock. It will be built in Gebeng (Pahang), which is close to the port of Kuantan, and shall commence operations in 2002. The new plant will represent a significant expansion in the JV's activities, which was formed in August 1997. BASF holds a 60% stake and Petronas 40% in the JV. (February 26, 1999)

Norsk Hydro ASA of Norway has opened its first manufacturing facility in Malaysia, a RM45m (US\$12m) CO₂ liquefaction plant in Paka, 100km from Kuala Terengganu. **Norsk Hydro Asia** president, Dr. Per-Christian Endjso, said at the launch that he hoped to use Malaysia as a platform for regional

activities. **Hydrogas Malaysia Sdn Bhd**, fully owned by Norsk Hydro Asia, built the new plant. It produces CO₂ for beverages and mineral water, freezing and packaging of food products, production of plastic products, chemical applications, fire-fighting and neutralization of waste water. (March 11, 1999)

Petronas has signed a shareholders' agreement for its ldPE project in Kerteh, Terengganu, with **Polifin** and **DSM Polyethylenes**. Petronas and Polifin will each take a 40% stake in the project with the remaining 20% being taken by DSM. The 255,000 tpa ldPE plant is scheduled for startup in Q3 2001 and will use DSM technology, licensed by DSM subsidiary **Starnicarbon**. The plant will be built for later expansion to 300,000 tpa. (February 22, 1999)

PHILIPPINES

Bataan Polyethylene Corp (BPC) has indicated interest in the gas reserves in Fuga Island, northern Philippines, and is hoping that there is sufficient ethane available to feed its cracker. BPC comprises **Bataan Polyethylene Holdings Corp, Petronas** and **BP Amoco** and is building a 250,000 tpa PE plant in Bataan. Both Petronas and BP Amoco have expressed interest in building a cracker in the Philippines, but have declined to specify their intentions. **Bataan Olefins** and **Polymer Corp (BOPC)**, and **JG Summit** the **PNOC**-led consortium are the other three groups studying a cracker project in the Philippines. (March 8, 1999)

SINGAPORE

Buckman Laboratories of the US has opened a S\$6.9m (US\$4m) manufacturing facility in Singapore. The 2,800 sq meter site houses **Buckman Asia's** production plant, technical service center, warehouse and offices. The new plant will supply the company's customers in Asia, excluding Japan. Buckman, which earns more than half of its revenues from outside the US, provides specialty chemicals and services,

mainly for the papermaking, water treatment and leather tanning industries. (March 16, 1999)

E. Merck of Germany is constructing a plant that will produce ultra-pure hydrogen peroxide through a JV with **Mitsui** and **Santoku Chemical Industries** in Singapore. Management is also considering commercial production of isopropyl alcohol and other chemicals in Singapore. (March 1, 1999)

TAIWAN

E. Merck has secured land in southern Taiwan for the future manufacture of purified chemicals for the electronics industry, complementing an existing business in Hsinchu. E. Merck has announced plans to expand its specialty chemicals portfolio through a combination of technological innovations and globalization. E. Merck plans to allot 10% of the R&D budget for specialty chemicals to lithium battery materials. (March 1, 1999)

Nan Ya Plastics' new 150,000 tpa 2-ethylhexanol (2-EH) facility in Mailiao, Taiwan, is still facing technical problems, and commercial production has been deferred to April. A closure of a European plant due to raw material problems also failed to boost 2-EH prices in Asia. Market sentiment has been weak with the impending startups this year by Nan Ya and by Eastman, which will also bring onstream a 2-EH facility at its new oxo chemicals complex in Singapore around mid-1999. (February 28, 1999)

Tuntex Petrochemical is in discussions to sell its 420,000 tpa purified terephthalic acid (PTA) facility in Tainan after cashflow shortages threatened attempts to restructure part of its NT\$4bn (US\$120m) debt. Tuntex is now in serious talks with three parties, including Taiwanese rival **Capco** and **DuPont**. It does not rule out starting talks with other multinationals. The company hopes to complete the sale by the end of this year. Sources believe the sale could benefit Tuntex by allowing it to focus its investments in China. The company has already invested in a 300,000 tpa polyester facility in Fujian, and has plans to back integrate into PTA at the same site. (March 1, 1999)

THAILAND

Asahi Chemical Industry has established a wholly owned subsidiary in Thailand to purchase a Bangkok-based denatured polyphenylether (PPE) resin facility. The purchase price for the 15,000 tpa plant, operated by **Nippon Pigment**, has yet to be decided. Asahi produces 30,000 tpa of PPE in Japan. (March 1, 1999)

Bayer is planning investments of DM4bn (US\$7.2bn) in Asia, with a particular emphasis on Thailand. In addition to ABS resin and SAN resin plants already in operation, Bayer is currently constructing a polycarbonate resin facility scheduled for completion in the H2 1999. Bayer plans, as the project's second phase, to double PC resin capacity to 100,000 tpa and to build facilities for producing raw material bisphenol A. (March 26, 1999)

The Petroleum Authority of Thailand (PTT) is evaluating an opportunity to take an equity stake in **Thai Paraxylene (Thai PX)**. Thai PX needs more than US\$180m to resume construction of its US\$220m paraxylene facility in Si Racha. PTT is assessing the viability of the Thai PX project. If it is viable, PTT will try to fund it using internal resources. The Thai PX project is 75% complete and was originally scheduled for commissioning in November 1999. (March 1, 1999)

Siam Cement has confirmed that it will debottleneck the Rayong Olefins cracker in Mab Ta Phut, Thailand, increasing ethylene capacity from 600,000 tpa to 720,000 tpa. It has yet to finalize the startup schedule. The company is not worried about the current oversupply as it expects the market to pick up in 2001 and 2002. It also said it is confident of raising the US\$50m required by 2002. (March 22, 1999)

Vinythai has been forced to draw subordinated loans from shareholders for the second time in six months to cover principal debt repayment. The PVC manufacturer borrowed US\$8m from shareholders in August 1998 and an undisclosed sum in January 1999 to meet bi-annual principal commitments of US\$11-US\$12m. The fact that Vinythai was forced

to draw from its US\$50m fund has revived speculation that the **CP Group** will renew efforts to sell its 38% shareholding to **Solvay**. Solvay currently holds a 45% stake. (February 28, 1999)

VIETNAM

Gas Conversion Systems Vietnam has been approved by the government to build a floating methanol project. The wholly owned 1,500 tpd methanol project is expected to start up in 2001. It will use flared gas feedstock from Block 15-2 in the Rang Dong field. (February 22, 1999)

FOCUS:

Engineering Plastics in Asia

Engineering plastics are materials possessing better mechanical properties and heat resistance than ordinary plastics, so that they can be used as structural materials. Asia has long been a volume producer of **ABS**, which falls at the commodity end of the five main types of engineering plastics. China, in particular, has become a huge producer of ABS and, even in the worst cases, production volumes are running at a minimum of 70% of capacity. The economic downturn has had varying degrees of negative effect in the region, and large producers such as **Chi Mei** of Taiwan, and **Technopolymer** of Japan (a JV between Japan Synthetic Rubber and Mitsubishi Chemicals) are among those which have been hit.

Other types of engineering plastics including **PET**, **Nylon 66**, **Polycarbonate** and **PMMA** are also produced throughout Asia, although the main centers for production continue to be **Japan**, **Korea** and **Taiwan**. Large foreign participants are active in the region, including the likes of **GE Plastics**, **Dow Chemical**, **DuPont** and **Shell**.

Chi Mei Corp, Taiwan

Established in 1959 in Taiwan, **Chi Mei Corp** produces ABS, polystyrene and SAN. Its capacity for these products has increased more than 50-fold since the 1970s, making

the company one of the world's leading producers of styrenic resins. Chi Mei is recognized as a world leader in the production of plastic resins. It has a 350-acre production and research complex in Taiwan and has achieved ISO 9002 certification. Chi Mei has spent US\$30m over the past ten years to implement environmental and safety programs, winning the company national awards for environmental responsibility.

Hengdian Tospo Engineering Plastics Co, China

Hengdian Tospo Engineering Plastics Co is one of the major producers of **modified engineering plastics** in China. Its products are: long and short fiberglass reinforced grade, retarded grade, long or short fiberglass reinforced and retarded grade, filled grade, toughened and ultra-toughened grade, plastics alloy grade, and engineering plastics. It produces according to international standards and has obtained Underwrites Laboratories (UL) certification. The company is part of **The Hengdian Group**, second largest private enterprise in China. The Hengdian Group businesses, include electronics, magnetic materials, textiles, engineering plastics, chemicals and pharmaceuticals.

Kohap Engineering Plastics, Korea

Kohap Engineering Plastics manufactures and exports engineering plastic compounds under the name KOSCOM. It also produces rubber and plastics products, pins and needles for bookbinding, rug-making, knitting and sewing, and acrylic resins, polyacrylates, polymethylmethacrylate, copolymers and compounds. Kohap Engineering Plastics recently formed a JV with **DSM Engineering Plastics** of the Netherlands. The new company, DSM Kohap Engineering Plastics Ltd, is 51% owned by DSM and 49% by Kohap. The new company will focus on the marketing and sales of engineering plastics in Korea. Kohap Engineering Plastics is a member of the **Kohap Group**, which was established in 1966 and has activities in resins, yarns and base films. In 1998, the Group recorded revenues of Won4,000bn (US\$3.3bn).

Korea Engineering Plastics Co Ltd, Korea

Korea Engineering Plastics Co Ltd was founded in March 1987, as a JV between Korea's **Hyosung T&C**, Japan's **Mitsubishi Gas Chemicals** and **Mitsubishi Trading Company**. Korea Engineering Plastics makes

polyacetal resin which is widely used as a material for structural components in products such as electrical, electronic, automotive and OA devices and industrial machines. KEP claims a 65% domestic market share and continues to lead the Korean engineering plastics industry. Current actual production capacity stands at 35,000tpa of polyacetal resin. The company has international certifications such as ISO 9001, QS 9000, NSF 14 & 61, FDA, UL from the USA, CAS from Canada and BS 6920 from UK. KEP's head office is in Mapo-Ku, and its plant is in Ulsan. Paid up capital is Won 11bn (US\$9bn).

Kumho Chemicals, Korea

Kumho Chemicals Industry Co Ltd, previously known as Hannam Chemical Corp, is a producer of synthetic resins PS, SAN, ABS, EPS, E(PE/PS) and engineering plastics as well as PPG for urethane intermediate materials. Kumho Chemicals' 1998 revenues were Won329bn (US\$263m), of which export sales accounted for almost 50%. **Kumho Petrochemicals Co** is the major shareholder with 29.01% of issued stock. Kumho has 460 employees and operates a manufacturing plant at the Ulsan Petrochemical Complex in Korea, and a R&D Center in Kyungido, Korea. Kumho is ISO9002 certified since 1994 and has obtained the German Institute for Construction Engineering's PA III Certification (for EPS resin). It licensed its technologies to **PT Risjad Brasali Styrimdo**, Indonesia in 1992 and to **Sinopec**, China in 1994. Also, **Panjin Shuangxing Engineering Plastics Co Ltd** of China uses technology patented by Kumho to produce 50,000 tpa of ABS.

LG Chemical, Korea

LG Chemical, incorporated in 1962, is one of the largest chemical companies in South Korea. It has become Korea's largest manufacturer of plastics, boasting revenues of Won 4,500bn (US\$3.7bn) for 1998. The company is vertically integrated, on producing a full line of industrial chemical products such as VCM and other basic petrochemical materials, PVC, PE, styrene compound resins, advanced engineering plastics, specialty chemical products, and industrial and building materials. In February 1998, LG Chemical established a US\$250m JV with **Dow Chemical Co** of the United States. Together they will produce up to 130,000tpa of polycarbonate resin in Korea. Polycarbonate is the basic material used to manufacture compact discs and is used widely in the automobile industry and home appliances. The plant will start operations in year 2001.

The global polycarbonate market is believed to be in the early stages of development and is expected to grow at 7% to 10% annually over the next few years. Dow will invest US\$160m, the largest amount of foreign capital attracted to Korea from a single manufacturer since the economic downturn hit Asia.

Marak and a sales office in Jakarta. The principal engineering plastics produced are SAN, EPS and ABS. Production capacity for SAN is 20,000tpa, EPS 15,000tpa, and ABS 20,000tpa. Capacity for ABS is increasing to 40,000tpa later in 1999. SAN is sold mostly to the automotive industry. The company exports to Singapore and Australia.

Mitsubishi Engineering Plastics Corp, Japan

Mitsubishi Engineering Plastics Corp was established in 1994 after the consolidation of the engineering plastics business of Mitsubishi Gas Chemical Company Inc and Mitsubishi Chemical Corporation. Products include polycarbonate, m-polyphelene ether (m-PPE), polyamides, polyamide MXD6 (PAMXD6), polybutylene terephthalate (PBT), Glassfiber Reinforced PET (GR-PET), polyphenylene sulfide (PPS), liquid crystalline polymer (LCP) and polycarbonates (PC). This company is one of the top suppliers of engineering plastics and claims the largest market share of polycarbonate resin.

Showa Denko KK, Japan

Showa Denko KK of Japan has five business groups: petrochemicals, specialty chemicals, electronics, inorganic materials and aluminum. It has begun commercial production of polyamide 66 (nylon 66) and polyacetal resin composites in which nanometer-thick synthetic mica fillers are uniformly dispersed by means of an extrusion-mixing system that the company has developed. This makes it possible to increase substantially the heat resistance and rigidity of resin. Showa Denko is the world's first to make such engineering plastics commercially. The new process can adjust the amount of filler to be mixed depending on the target product. It can be applied to a variety of resins ranging from polyolefins to engineering plastics and masterbatches. By expanding grades and lineups for use in electronic, auto and industrial machine parts, the firm expects to increase yearly sales of such resins to over 1,000 tpa by the year 2000.

PT Risjad Brasali Styrimdo, Indonesia

PT Risjad Brasali Styrimdo was established in 1991 and is a wholly owned subsidiary of **Risjad Brasali Industries**. It has 300 employees and operates a manufacturing unit in

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ABOUT BDA

Business Development Asia is a corporate finance advisory firm which assists multinational companies to expand their businesses in Asia. BDA specializes in the chemical industry and helps clients to find local business partners. BDA has senior advisors in Bangkok, Jakarta, Kuala Lumpur, Manila, Seoul and Shanghai. For further information on BDA's services or on any of the articles in this newsletter, please contact Euan Rellie or Charles Maynard, through our New York office, or Andrew Huntley in Singapore.

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