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HOUSTON, Nov. 15 /PRN/ -- A 500-million-pound-per-year expansion of the Shintech Inc. polyvinylchloride (PVC) resin plant in nearby Freeport, Texas, announced Sept. 27, 1987, has been successfully completed and "has come flawlessly into full production," according to Chihiro Kanagawa, the company's president and chief executive officer.

Debottlenecking now underway will be concluded shortly. Products from this latest expansion are already supplying Shintech's customers in this country and abroad with increased quantities of the uniformly high-quality resin for which the company is famous.

One of the world's fastest-growing basic producers of PVC, Shintech has continued to expand from its initial rated capacity of 220 million pounds annually in 1974 to its new level of 1.5 billion pounds after the current debottlenecking.

Kanagawa announced also that Shintech's board of directors has authorized an additional 500-million-pound increase in PVC capacity at the Freeport plant. This will raise the total capacity there to 2 billion pounds per year when this new expansion goes on stream in 1990.

Shin-Etsu Chemical Co., Ltd., Shintech's Japanese parent firm, itself has a PVC capacity of 600 million pounds a year. So the overall Shin-Etsu group, with a total combined vinyl-resin capacity of 2.6 billion pounds after the newly authorized expansion, will then be the world's largest producer of polyvinylchloride resins.

In making these announcements, Kanagawa expressed his deep appreciation to Shintech's customers, suppliers, and employees. "Without the growth and the continuing loyalty of our customers," he said, "it would not have been possible for us to grow as we have.

"Obviously, such growth has put major demands on our suppliers, and we are extremely grateful that they have always performed reliably and provided us with materials of the consistently high quality Shintech requires. And, of course," Kanagawa added, "without the dedication of our employees, and their high level of productivity in making our superior-quality products, Shintech could not have achieved the exceptional degree of customer satisfaction we enjoy.

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Shintech hikes US PVC capacity

SHINTECH INC, a US subsidiary of Shin-Etsu Chemical of Japan, has announced plans for a two-part expansion which will result in a 227 000 ton/year increase in Shintech's polyvinyl chloride resin production capacity at its Freeport, Texas, facilities.

Work on the project, costing in excess of \$100m, has already started and the first phase, which will add some 113 500 ton/year to capacity, is scheduled on stream by October 1988. The additional 113 500 ton/year, due on stream two years after the first phase is completed, will come from process improvement and debottlenecking programmes.

Shintech will use its proprietary PVC technology in combination with the most advanced and efficient PVC process know-how from Shin-Etsu, the world's largest licensor of PVC technology.

Because of its product quality, uniformity and reliability, Shintech has enjoyed continued growth from an initial capacity in 1976 of 100 000 ton/year to its current capacity of 454 000 ton/year. The expansion will raise the capacity of Shintech's two plants at Freeport, Texas to 681 000 ton and put it on the same level as the current US leading producer, B F Goodrich, which has a nameplate capacity of 681 000 ton/year.

Total US PVC capacity is estimated at 3.4m ton/year. Other major producers include Borden Inc and Occidental Petroleum. The US market will absorb a major portion of the product but some will also be exported.

The company declined to reveal where it intends to obtain its vinyl chloride monomer feedstock but said that the present plants are connected by a pipeline to Dow's Freeport complex.

In its first assessment of the cosmetics industry in more than a decade, the investigative arm of Congress is raising serious questions about the government's ability to supervise the \$18 billion-a-year industry that produces cold cream, talcum powder, shampoo, deodorant and a myriad of other personal care products.

"It's incredible that the cosmetics industry can urge millions of Americans to apply chemicals to their bodies daily and not be held accountable," says Rep. Ron Wyden (D-Ore.), chairman of the House subcommittee that requested the study.

FDA officials have found that many manufacturers lack adequate data on safety tests and have generally refused to disclose the results of these tests," the report states.

"Most Americans will be stunned to learn that the government doesn't know whether the cosmetic products used by millions of Americans contain dangerous ingredients," says Rep. Wyden.

Cosmetics, Toiletry & Fragrance Association, the industry's trade group, strongly disputes the assertions and says its record for producing safe products is

cosmetic maker to reactions.

"Because it is never be able to react particularly those because they have cosmetics," says th

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Shintech Puts Final Touches On Big Freeport PVC Plant

A look at the polyvinyl chloride resin market today shows that Shin-Etsu Chemical Company of Japan is the global leader. How did this happen? Not only is its US subsidiary Shintech Inc. putting the finishing touches on the world's largest single PVC plant at Freeport, Tex., but the Tokyo-based firm's polyvinyl chloride manufacturing process has been licensed worldwide by 42 other producers.

Currently, the Texas unit and 18 licensees account for 15 percent of total world capacity — some 6.2 billion pounds a year.

Shintech's 2-billion-pound US figure will be not only the world's largest PVC plant at one site, but arguably the world's largest individual company capacity. Currently, Occidental Chemical Corporation can make 1,910 million pounds a year at three US locations and B.F. Goodrich Company has potential for 1,750 million pounds at six sites. No other producer comes close (CMR, 6/5/89, pg. 50).

If Shin-Etsu's process is so good, why doesn't everyone license it? "They can't," says Chihiro Kanagawa, Shin-Etsu's corporate senior vice-president and president of the international division. "We recently stopped licensing PVC processes." Only Shell in the Netherlands will put in Shin-Etsu-based technology; then, no further licenses will be granted.

Why does Shin-Etsu pass up the opportu-

nity to grant more licenses and reap the royalties? Mr. Kanagawa told CMR in an interview that the company's PVC process, which has been steadily improved, has a matchless cost/price advantage.

In 1969 Shin-Etsu announced development of its process, chief advantage of which is giant polymerizers. This technology was proved out in an installation at the Kashima plant, north of Tokyo, in 1970.

Because of the huge reactors, Shin-Etsu claims it has stringent control of vinyl chloride monomer emissions and losses; further, manpower savings are achieved through advanced instrumentation: a plant ranging from 50,000 to 200,000 metric tons per year capacity needs only four to six operators per shift.

In addition, the Japanese firm claims high product quality through the use of special polymerization formulas, which are jealously-guarded secrets, and strict safety and pollution control standards.

American subsidiary Shintech Inc., of which Mr. Kanagawa is president and chief executive officer, will reach a planned capacity of 2 billion pounds annually at its Freeport plant by the end of this year. (The name Shintech is derived from a 50-50 joint venture established in 1974 with Robintech, Inc. The latter sold its interest to Shin-Etsu in July, 1976, but the original name was retained by the surviving firm.)

And Shintech's sales have been steadily

Continued on Page 27

National Starch Acquires Three Adhesives Businesses

National Starch & Chemical Corporation bought three small adhesives units last week to strengthen its existing businesses. So far this year, the number of adhesives divisions National has purchased totals six.

To fortify one of its fastest growing businesses, the \$1.6 billion company bought Rohm and Haas' Electro-Materials (EMCA) subsidiary, which supplies thick film pastes to the micro circuitry market. EMCA's sales total about \$8 million.

Rohm and Haas said it sold this business because it was too small to compete successfully with the top-tier companies. National Starch plans to combine the newly acquired unit with its own Remex Products division, which makes ceramic metallurgical thick

company generated about \$4 million in sales last year.

National Starch last week also combined Borden's industrial packaging and converting business in Canada with its own Canadian business. The Borden operation includes polyvinyl acetate and acrylate emulsion-based adhesives for cardboard packaging, as well as liquid starch, dextrin adhesives and casein-based materials. The Borden division had 1989 sales of about \$2 million.

Chemical Market Report

Monsanto La New Maleic I

Confident that maleic anhydride markets will continue to perform well, domestic production leader Monsanto Chemical Company has announced plans to increase its North American MA capacity by 180 million to 240 million pounds annually by the mid-1990's.

The MA expansion projects are expected to be completed in two phases. The first involves expanding Monsanto's Pensacola, Fla., facility while the second calls for the construction of a new grassroots facility.

Monsanto's Pensacola plant will be expanded by 60 million pounds, bringing the plant to its ultimate capacity of 300 million pounds per year. The additional capacity at the plant will be achieved through further debottlenecking. Michael W. Winkle, vice-president and general manager of Monsanto's rubber and process chemicals division, says this phase of the expansion should find approval this year.

The second phase will be construction of a new grassroots facility with locations under consideration in both the northern US and Canada. The new facility will also use Monsanto's fixed bed butane technology. It is expected that Monsanto will recommend a plant location by the end of this year, followed by submission for board approval.

"Canada would be an ideal site for Monsanto's second world-scale maleic facility," says Mr. Winkle. "We have the leading mar-

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Chemical Marketing Cues

ALPHA OLEFINS: Polyethylene expansions will ensure

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Shintech Puts

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increasing in the extremely competitive PVC market since Shin-Etsu took over. From \$27 million in 1976, sales reached \$230 million in fiscal 1986 and over \$500 million in 1988. Mr. Kanagawa predicts increases of 4.5 percent annually over the next several years.

Mr. Kanagawa's view is more optimistic than that held by some others in the PVC business. Fred Sacks of Occidental told the DeWitt 1990 Petrochemical Review in Houston that, in his view, demand growth will be 3.1 percent compounded annually for the period 1989 to 1994.

At the same time, Mr. Sacks sees world operating rates dipping as low as 84 percent of capacity in the early nineties, and recovering somewhat around 1994. He notes also the attrition among US producers: in 1980 there were 19; last year there were only 13.

Shintech president Kanagawa predicts further dropouts by smaller, less efficient producers over the near term. And despite cries of overcapacity in the industry, he points out that the company announced a boost of pipe grade PVC April 1, to 36 cents a pound.

In fact, prices have risen steadily from a January 1 level of 33 cents, and Mr. Kanagawa and Shintech director of sales and marketing Geoffrey W. McMath anticipate a firming trend.

While Messrs. Kanagawa and McMath decline to disclose a detailed PVC end-use pattern, they point to some areas where demand is strong, such as pipe. New construction may plateau, but pipe, which contains 90 to 95 percent PVC with other additives, benefits not only from increased demand for new applications, but from retrofitting worn-out infrastructure.

One booming consumption area is solid vinyl window profiles. Here again, there has been massive-scale retrofitting of solid vinyl double-glazed window systems in structures ranging from small homes to huge buildings, accounting for burgeoning consumption of

PVC-based materials containing 80 to 85 percent resin.

A similar situation exists in vinyl siding, which also can contain 80 to 85 percent PVC, the balance being additives. While it is widely used in new construction, its use in upgrading of current structures also fuels growth.

Shintech's PVC complex is located near the site of its vinyl chloride monomer supplier, Dow Chemical Company. The closeness of the supplier-consumer relationship is reflected not only in Dow's proximity, but by the fact that C. B. Branch, former chairman of Dow, has been on Shintech's three-member board since 1981.

Mr. Kanagawa points out that Dow was chosen as a supplier because Shin-Etsu deems the Midland, Mich., firm the most proficient in know-how in monomer, chlorine and ethylene dichloride precursors and "the best and most reliable" source available to the firm.

Citing the Shin-Etsu PVC process as complying with increasingly strict environmental standards, he nonetheless is strongly aware of the need for industry cooperation in solving air, water and solid waste pollution difficulties.

"This is an industry-wide problem and all producers need to share information, instead of costly duplications of effort," he believes. He points to measures being formulated by organizations such as the Vinyl Institute in the US and the Polyvinyl Chloride Association of Japan.

Parent firm Shin-Etsu is the world's largest supplier of silicon wafers to the electronics industry. In addition, facilities in Japan produce monomer, polyvinyl acetate, polyvinyl alcohol, methyl cellulose and other cellulose esters and a variety of electronics industry materials.

Is it likely that the Japanese firm will produce the large monomers and chloromethanes in the US? "We have no definite plans," says Mr. Kanagawa. "We have open options."

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CARGILL

Cargill citric acid production starts January

KEY CHANGES



Kaplow: Aristech environment v.p.

DENIS ANDREUZZI has been elected president and chief operating officer of Witco (New York). He succeeds THOMAS J. BICKETT, who resigned the position for personal reasons. Also Witco's Argus Division (New York) has appointed RICHARD J. STIMPFL to vice president/marketing and business development. And CARL A. FERRARO becomes vice president/sales for thiochemicals and specialty chemicals, including aluminum chloride; and JAMES T. REALY is now vice president/sales for polymer additives.

LEE A. DEETS is the new chief executive officer of Encycle/Texas, a hazardous waste management and chemical manufacturing company in Corpus Christi, TX.

JOHN L. VAN BUREN has been named chief executive officer of Glitsch International (Dallas), a subsidiary of Foster Wheeler. He is currently president and chief operating officer of the company. Also, ROBERT E. DONOVAN has been elected vice president of Foster Wheeler's (Clinton, NJ) Energy Equipment Group, which designs and manufactures steam generators and auxiliary equipment for electric utilities and industrial markets worldwide.

Allied-Signal (Morristown, NJ) has appointed KARL R. FLEDDERJOHN to the newly created position of president, sector staff of Allied-Signal Aerospace (Torrance, CA). DANIEL P. BURNHAM will succeed Fledderjohn as president of the AiResearch Group. Allied has appointed NICHOLAS A. CAMERON to senior vice president

and general manager in charge of the chemical intermediates business for Allied-Signal Engineered Materials. Also promoted was DAVID C. HILL, to senior vice president and general manager of the Allied-Signal Engineered Materials' Industrial Fibers, Spectra Fibers, and Metglas products; and JOSEPH M. DEVITTORIO is the new senior vice president and general manager of Engineered Materials' Home Furnishings Fibers business.

Dexter Corp. (Windsor Locks, CT) has named T. DANIEL CLARK, vice president in charge of corporate development. He succeeds STEPHEN J. RAFFAY, who has retired.

ROBERT N. BURT has been named president of FMC (Chicago). He succeeds RAYMOND C. TOWER, who is retiring.

Howell Corp. (Houston) has chosen PAUL W. FUNKHOUSER to succeed STEVEN K. HOWELL as president and chief operating officer.

Sun Chemical (Fort Lee, NJ), a manufacturer of printing inks and organic pigments, has announced the promotion of MICHAEL S. MURPHY to corporate vice president.

W.R. Grace (New York) has named ROBERT J. BETTACCHI and EDWIN L. CHESNUTT presidents of the company's construction products division and the Amicon division, respectively. Both are part of the Grace Specialty Chemicals unit. Bettacchi was a vice president of the construction products division and succeeds ROBERT C. WALSH, who was recently appointed executive vice president of Grace Specialty Chemicals. Chesnutt was executive vice president of Amicon and succeeds PETER N. RIGOPULOS, who is now vice president of Grace Specialty Chemicals.

Aristech Chemical (Pittsburgh) has promoted PAUL M. KAPLOW to vice president/environmental affairs, occupational health and safety. SMITH E. HOWLAND has been named general manager/industrial and specialty chemicals for Aristech.

J. J. FRANSEN VAN DE PUTTE is the new vice president of DSM's (Heerlen, the Netherlands) Polymers & Hydrocarbons Division. He succeeds R. DE VISSER, who was appointed president of DSM Elastomers.

BRIAN FULLEYLOVE has been named to succeed DEREK F. TWOGOOD as president of Courtaulds Fibers (New York). Twogood is retiring.

RHEOX (formerly NL Chemicals; Hightstown, NJ) has elected MICHAEL J. KENNY president and chief operating officer. He previously served as president of North American operations for NL Chemicals.

THOMAS L. DAHL has been appointed president of the Drackett Co., a Bristol-Myers Squibb (New York) company. He takes the position over from DOUGLAS G. COWAN.

Catalytica (Mountain View, CA), a developer of advanced catalytic process technologies for use in the manufacture of chemical and petroleum products, has named HOSHI PRINTER its chief financial officer and vice president/finance.

JACK E. OPPASSER has been appointed to the position of vice president/worldwide business management at Arco Chemical (Newtown Square, PA). Oppasser replaces MARVIN O. SCHLANGER, who became Arco Chemical's chief financial officer last October.

CHARLES M. DOSCHER has been appointed director of marketing for Shintech (Houston), a producer of high-purity polyvinyl chloride resin.

The board of directors of British Petroleum (London) has appointed



Murphy: Sun Chemical corporate v.p.

(CONTINUED)

Japanese Descend on US Chemicals

CONTINUED FROM PAGE 1A

cause the resin prevents spoilage.

"Their plastic keeps oxygen out of the food," says Mr. Pilko. "Evalca created its own market. But a major food company would be reluctant to base its packaging on imported plastics."

Beside Evalca, four other companies account for the HEDC's estimate of more than \$300 million worth of Japanese chemical investments in Houston:

- **Arakawa Chemical Industries Ltd.** of Osaka has selected Houston as a site for its future chemical manufacturing facility, with the purchase of a 45-acre site in the Bayport Industrial District, a major chemical center created south of Houston by Friendswood Development Co.

- **Kaneka Texas Corp.**, the U.S. subsidiary of Osaka's Kanegafuchi Chemical Industry Co., has completed expansion of a plant to annually produce 52 million pounds of the methyl butadiene styrene, which keeps clear plastic from breaking.

- **Nippon Pigment (USA) Inc.** selected Houston for a pilot plant to produce custom compounds for the plastics industry. Construction of an even larger facility there has tripled Nippon Pigment's existing capacity.

- **Shintech Inc.**, a subsidiary of Shinetsu Chemical of Tokyo, employs 130 workers at its polyvinyl chloride resin plant in Freeport, La., just south of Houston. It was the earliest Japanese entry in the Houston area chemical community.

- **Tonen Petrochemical** of Tokyo has opened a Houston branch office to market compound resins with some of its research development and engineering activities also centered there. The Tonen office replaces one in New York because, says the HEDC, top company officials believed it strategically important to be in Houston.

Since last fall, the local government has offered a tax abatement program for companies investing in fixed assets, delaying taxes for five years on improvements worth more than \$5 million. According to Mr. Syal, an investment of \$50 million in hard assets would net a savings of \$5 million over a five year period.

Without bending federal environmental laws, Mr. Syal said, the state provides consistent rulings on pollution questions building a repu-

Japanese Companies Target US Specialty Businesses

By CHARLES THURSTON

Journal of Commerce Staff

Japanese companies maintained a moderate level of new investment in U.S. chemical and allied product companies during 1987, following a 1986 surge, according to statistics from Fairfield, N.J.-based Kline & Co. Inc.'s Chemtrack investment tracking service.

Although the overall value of 19 investments last year was less than \$700 million, according to the Chemtrack figures, the list suggests that the Japanese companies are targeting specialty businesses in specific niches.

The 1987 acquisitions are a continuation of a significant in-

crease in activity begun in 1986, when 22 acquisitions were reported, following six in 1985, two in 1984 and one in 1983, according to Valerie Kollonitsch, the senior consultant on Kline's Chemtrack project.

Dainippon Ink & Chemicals Inc., which purchased **Reichhold Chemicals Inc.** in 1987 for some \$600 million and **Sun Chemical Corp.** in 1986 for some \$550 million, "appears to be the most aggressive investor among the Japanese chemical companies," Ms. Kollonitsch observed.

The chart below lists 1987 Japanese acquisitions of U.S. products, product lines or companies.



Japanese Chemical Acquisitions in US Target Specialty Niches (Value in Millions of Dollars)



Japanese Investor	U.S. Target	Value
Dainippon Ink & Chemicals Inc.	Reichhold Chemicals Inc.	\$600.0
Dainippon Ink & Chemicals Inc.	Quixote	10.0
Fujisawa Pharmaceutical Co.	SmithKline Beckman Corp.	.
Mitsubishi Corp.	Hoechst Celanese Corp.	.
C. Itoh & Co.	Biostar Medical Product	.
Lion Corp.	Minnetonka/Henkel Corp.	7.0
Kao Corp.	High Point Chemical	13.0
Marubeni Corp.	Helena Chemical	20.0
Marubeni Corp.	Network Polymers	1.0
Mitsubishi Chemicals Industries	Western Litho Plate & Supply	.
Mitsubishi Rayon Co.	Polyoptical Products	0.5
Mitsubishi Rayon Co.	Advance Display Technology	1.5
Mitsui & Co.	Imatron	2.0
Nippon Mining Co.	Irvine Scientific Sales	3.6
Nippon Oil Co.	Metal Coatings International	8.0
Nitto Electric Industrial Co.	Hydranautics	14.0
Sakata Shokai Ltd.	Acme Printing Ink	.
Shin-Etsu Chemical Co.	Brooktree	.
Sumitomo Bakelite Co.	Sheldahl	4.9
Total		\$665.5

*Small sum or not available. SOURCE: Kline & Co. Inc.'s Chemtrack, Fairfield, N.J.

DOUG PINKERTON/Journal of Commerce

tation as a state that is "industry-friendly."

Mr. Syal recently returned from a trip to Japan with other HEDC officials and representatives from Houston Lighting & Power Co., and reported that 90% of the mission focused on chemical companies, with seminars in Osaka and Tokyo.

Elsewhere in Texas, the Calhoun County Economic Development

Corp. is well along in developing a Taiwanese proposal, for an estimated \$2.8 billion petrochemical project by Formosa Plastics Corp.

The Formosa proposal is driven heavily by the attractiveness of the U.S. dollar relative to new construction costs in Taiwan, where land is as scarce as in Japan, according to Doug Lynch, the Calhoun County EDC director.