

tection including NFPA-13 sprinkler systems and NFPA-72 alarm and detection systems for all hotels, motels, rooming houses, dormitories and health care facilities.

2. Urge their members to avoid non-conforming hotels and motels.
3. Encourage properly protected hotels and motels to identify themselves in advertising and at their registration counters.
4. Mount a campaign to encourage U.S. businesses and the federal government to require their traveling employees to patronize only properly protected hotels and take the same campaign to the individual traveler.
5. Encourage the insurance industry to be more aggressive in providing information about the premium differential of a fully sprinklered hotel versus a non-protected structure.

We believe that implementation of this program could increase the percentage of fully sprinklered hotels in the U.S. from the current 5 percent to 100 percent within 5 to 10 years and save thousands of lives.

It is possible that the outcome of

lawsuits stemming from Dupont Plaza tragedy may serve to spur long overdue action. Lawyers involved in the

Recent Major U.S. Hotel Fires

- MGM Grand Hotel, Las Vegas, Nevada, 85 dead (Nov. 21, 1980)
- Stouffer's Inn, Harrison, N.Y., 26 dead (Dec. 4, 1980)
- Las Vegas Hilton, Las Vegas, Nevada, 8 dead (Feb. 10, 1981)
- Westchase Hilton, Houston, Texas, 12 dead (March 6, 1982)
- Pinter Hotel, Hoboken, N.J., 13 dead (April 30, 1982)
- Dorothy Mae Apartment Hotel, Los Angeles, Calif., 24 dead (Sept. 4, 1982)
- Ramada Inn Central Hotel, Fort Worth, Tex., 5 dead (June 14, 1983)

case are saying that they may raise questions about the responsibility of architects, builders, code officials, building owners and fire officials beyond simply meeting the codes. Such a legal precedent might bring new allies to the effort to promote life safety.

Tackling the Solid Waste Issue

The Vinyl Institute has issued a new brochure titled "Plastics in the Waste Stream: Options for Practical Solid Waste Management." The 12-page booklet addresses the solid waste dilemma and the alternatives of recycling and resource recovery.

The well-documented brochure explains that the real problem society faces is not plastic packaging, but what to do with the 140 million tons of garbage that Americans generate



each year. As popular as plastic packaging is, says the brochure, it makes up only 3-5 percent of the total municipal solid waste stream.

This brochure can be distributed to community groups, the media and even employees when questions come up

about plastics and the solid waste stream. Contact VI headquarters to obtain copies.

About Very Important People

Edwin Schiffer of Georgia Gulf Corporation has been appointed to serve on the Executive Board of the Vinyl Institute. He succeeds Charles Montgomery, who retired last year.

Marcelo Hirschler and Merrill Galloway of BFGoodrich and Bill Carroll (Occidental) met with the management of the National Bureau of Standards recently to report the results of hydrogen chloride's performance in the large-scale fire tests

conducted recently at the Southwest Research Institute. The tests showed that HCl quickly disappears from the air in the fire environment.

Michael O'Mara (Goodrich) was an invited attendee at the first meeting of a new group known as NFACT—the National Foundation for Applied Combustion Toxicology. He will sit on the group's material advisory board. NFACT plans to address the general issue of combustion toxicity.



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advisory

PVC Industry Reports Banner Year, Looks for Continued Strength in '87

Year-end statistics from the Society of the Plastics Industry and a general consensus among other sources confirm what Vinyl Institute members already know: 1986 was a record year for the polyvinyl chloride industry, the brightest since the late 1970s. With no dark clouds on the economic horizon, the PVC picture continues to look bright for 1987.

According to SPI, sales of PVC resin in 1986 were up 10 percent to 7.4 million lb. after a flat year in 1985. Production rose 7.1 percent to 7.3 million lb. Though consumption got off to a slow start in a number of sectors, notably pipe, volume moved ahead in mid-year and continued strong through the second half.

PVC prices also ended the year on a strong note, according to Charles Siebert of Chemical Data Inc., Houston. "The year got off to a good start, then prices faltered in the summer," he said. "After September, additional demand for the product developed and PVC prices picked up in the fourth quarter."

This year, prices have continued to move higher as a result of tightening supply at home as well as abroad. On a global basis, VCM and PVC markets are getting close to balance.

The PVC industry's strong per-

formance in 1986 was due mainly to three factors: a healthy year in building and construction, PVC's continuing market penetration versus competitive materials, and declining imports of both PVC resin and finished products. PVC's 10 percent sales gain outpaced the plastics industry as a whole, which grew at a 5.4 percent rate in 1986.

Shipments of PVC resin were generally up across the board, according to figures from SPI and *Modern Plastics*. Pipe and fittings, which account for 45 percent of U.S. demand, rose 10 percent. Siding and extruded profiles for window frames and accessories registered a 16 percent gain.

Opportunities exist for continued dramatic growth, according to observers. Windows, bottles and siding are far from mature, and exciting new compounds may come from alloys or from combination with fiberglass.

Export/Import Turnaround

An important factor in PVC's strong performance in 1986 was the export/import situation. The declining value of the dollar in relation to many foreign currencies helped make U.S. producers more competitive and dampened demand for imports. Exports

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Strong demand kept PVC resin and compounding plants operating at 90 percent of capacity or better in 1986. Seen here is OxyChem's Burlington, N.J. compounding plant.

were up 27 percent to 369 million lb. in 1986, while imports fell 35 percent to about 230 million lb.

In addition, pricing firmed as demand began to approach capacity. Dick Roman, manager for marketing research at BFGoodrich's Geon Vinyl Division and a member of SPI's Committee on Resin Statistics, estimates that the industry was at better than 90 percent of operating capacity for much of the year.

The strong U.S. performance did not come at the expense of European producers, however. PVC sales rose 6 percent in Europe, and at year's end, production capacities were thought to be close to 100 percent, according to *European Plastics News*.

Expansions & Consolidations

PVC supply was enhanced a bit last year by the reopening of a 125 million lb./yr. resin plant by a newcomer to the business. Another non-member of the Vinyl Institute added 15 million lb./yr. of suspension capacity at one of its facilities. So far this year, however, no major expansion projects have been announced, so capacity increases will be limited to debottlenecking and relatively minor expansion projects for some time to come.

Increases in compounding capacity announced by Georgia-Gulf, Vista Chemical, BFGoodrich, Occidental Petroleum Canada and one non-member of VI underscore the sig-

nificance of this segment of the business. Vista Chemical, for instance, announced three such expansions in 1986. Early in the year, the company completed the modernization of its Aberdeen, Miss., compounding plant. Vista also began compound production at renovated facilities in Jeffersontown, Ky., and completed the purchase of BP Performance Polymers' U.S. PVC business, including a compounding plant at Mansfield, Mass.

Changing Producer Lineup

A major shift in the PVC producer lineup also took place in 1986. First, Occidental Chemical Corp. acquired Tenneco Polymers' vinyl resins and compounds business, including facilities in Burlington, N.J., and Pasadena, Texas. The acquisition nearly doubled Occidental's resin capacity, making it the nation's second largest PVC resin producer, just slightly behind Goodrich.

BFGoodrich Canada consolidated its position as the largest PVC supplier in the Canadian market. The company acquired Novacor's 220 million lb./yr. mass polymerization plant in Fort Saskatchewan, Alberta, and also started up a 55 million lb./yr. expansion at Shawinigan, Quebec.

The largest addition to worldwide PVC resin capacity last year was in Jubail, Saudi Arabia, where a joint venture of Saudi Basic Industries Co. and South Korea's Lucky Goldstar Group started up a 440 million lb./yr. plant. The new facility could reduce U.S. exports to the Middle East and Pacific markets, say industry observers.

VI's Testimony Helps Head Off PVC Ban

Legislators in Vermont have softened considerably a bill that would have banned PVC packaging in the state, following testimony from The Vinyl Institute, SPI and other industry groups.

In its original form, the legislation would have taxed packaging that was not recyclable or biodegradable; required labeling to show recyclability and composition, and banned all PVC packaging and non-recyclable "fast-food" packaging. By mid-March, however, the offending provisions had been removed. The bill now only calls for the creation of a committee to study the issue.

VI executive director Roy Gottesman was among those who testified before the House Natural Resources and Energy Committee in February. He told

the committee that no basis existed for banning PVC. "None of the eight reasons the bill gives for the ban stand up to close scrutiny. The claims are seriously flawed from a technical and scientific standpoint."

He also questioned whether the action would have any meaningful effect. "Even if such a ban were justified, which is not the case, it would do very little to alleviate the solid waste crisis."

Gottesman told the committee that the emphasis the legislation placed on recyclability and biodegradability was misguided. "A total waste management program involving waste minimization, re-use, recycling and incineration — rather than a ban — is the true solution to the problem." He urged the legislators to make this their objective.

Viewpoint

Another Fire Tragedy: Will the Response Be Any Different?

By Harry Shaw, director, Operation Life Safety

The Dupont Plaza Hotel and Casino in Puerto Rico is the latest addition to the list of tragic hotel fires. The mid-afternoon fire on December 31, 1986, resulted in 96 fatalities and over 140 injuries.

It has been said, "History will be repeated unless we learn from it." But, sadly, we are not learning. A glance at the long list of recent fatal hotel fires (see box, p. 5) shows the price we have paid for inaction. No other industrialized nation has a fire death rate as high as the U.S. rate.

The irony of these tragedies is that the remedy is simple and well-known. The fire problem in the United States would virtually disappear if all hotels, motels and other such facilities were fully equipped with approved sprinkler systems and alarm and detection systems.

The record speaks for itself. There has never been a multiple death fire in a fully-sprinklered hotel or motel, nor is there a record of a single fire death from toxicity in a fully-sprinklered hotel or motel. In spite of these facts, it seems that more attention is paid to the side issue of toxicity than to the real issues of detection and suppression.

No Sprinklers in the Dupont

The absence of adequate detection and suppression systems at the Dupont Plaza was the critical factor in the

high number of fatalities. According to the National Fire Protection Association (NFPA) report, neither the 423 hotel rooms nor the area where the fire occurred had sprinkler systems.

Although there was fire-resistive construction in the casino, lobby area and high-rise tower, there were no fire detec-



Harry Shaw

tion systems, and the only fire evacuation alarm was a local-only manual system in the tower. The casino, where the majority of the deaths occurred, had only two exitways, one of which was a single, inward-swinging door.

The hotel fire problem is not only a state and community problem, it is a national one. When 16 people are killed in a train wreck, the federal government takes fast action to determine if automatic braking systems should be required. Are the lives of train passengers more important than the lives of hotel guests? Yet there are no federal fire protection regulations.

A Plan for Action

At Operation Life Safety, we have urged the following minimum program to put an end to these fire tragedies. The fire community and its allies should:

1. Support federal legislation mandating a minimum level of fire pro-

Full Court to Decide Emission Standards

The full federal appeals court in Washington has vacated a ruling by one of its panels that allowed the Environmental Protection Agency some leeway in setting emission standards for vinyl chloride (see *January Advisory*). The full court will now decide the issue. Oral arguments were scheduled for April 29.

The court panel had ruled, 2-1, that whenever the health effects of different levels of emissions are uncertain, the EPA may consider the cost and the technological feasibility of complying in setting standards. The challengers have argued that the Clean Air Act makes health the only factor that can be considered.

Vinyl Institute Annual Meeting Set

The 1987 annual meeting of the Vinyl Institute will be held at Turnberry Isle Yacht and Country Club in Miami, Fla., on Wednesday and Thursday, May 20 and 21. Committee meetings and presentations are scheduled for both days with the annual meeting and executive board meeting to be held Thursday

morning. The annual safety award and other achievement awards will be presented on Wednesday night following the dinner and reception. The meeting will close with a luncheon on Thursday. For more information call VI secretary Pat Benkner at (201) 890-9299.

in brief

✓ Occidental Petroleum and Shell Oil have announced a tentative agreement under which Occidental's chemical subsidiary, OxyChem, would acquire Shell's VCM business. A final agreement is expected to be reached during the second quarter of this year. The acquisition would include the VCM unit located at Shell's Deer Park, Texas, complex as well as certain other related assets. It would make OxyChem a fully integrated producer of PVC, more than 50 percent self-sufficient in VCM.

✓ Letters from VI executive director Roy Gottesman refuting statements about PVC were printed in the *New York Times* and the *Washington Times* in February. The story in the *Times* quoted an attorney who said that fumes from burning PVC can cause death immediately and were probably a factor in the fatal fire at the Dupont Plaza Hotel in Puerto Rico. The *Washington Times* had published a commentary article about PVC packaging that contained numerous false allegations.

✓ Representatives of The Vinyl Institute met with officials of the Food and Drug Administration on February 27, 1987, to determine what additional information FDA needed in order to promulgate its final proposal confirming the safety of PVC for food contact applications. A flurry of late comments to the FDA's February 1986 proposal has threatened to delay final action on the regulations.

✓ Reuters reports that Hoechst A.G., the West German chemical company, has said it will sue to keep the European Community from searching the company's files in an investigation of reported PVC price-fixing. The EC suspects eight European-based producers of PVC and polyethylene of operating a cartel. Other concerns under investigation include BASF and Belgium's Solvay.

✓ Vista Chemical has announced plans to build a new R&D center in Georgetown, Texas, 25 miles north of Austin. The 121,000 sq. ft. development is scheduled for completion by spring 1989. More than 60 Vista employees will relocate to the new facility when it opens.