

Wants Drug Makers

Continued from Page 4

for specified types of containers. The standard includes test procedures suggested limits for "tight containers" and "leak-proof containers".

The agency is proposing that information that manufacturers supply pharmacists of the type of container to be used may be in terms of specific materials, containers in terms included in the official compendium to define suitable containers e.g., "reserve in a tight container".

In the case of containers too small or otherwise unable to accommodate a label, sufficient space to bear this information but which are packaged within an outer container from which they are released for dispensing or use, this information may be contained in other labeling on the outer container from which it is to be released.

Cyanamid to Construct

Continued from Page 4

sulfosuccinate surface active agents. Construction will begin later this year, and plant is scheduled to be in operations by 1976.

With this major addition, Cyanamid will be producing surface active agents at five sites located to meet rapidly growing demand throughout the country. Cyanamid's surfactant manufacturing facilities are located in Azusa, Calif.; Charlotte, N.C.; Linden, N.J., and Wallingford, Conn.

Solar Energy Plan

Continued from Page 7

construction building, costing \$90,000. It is completed by next spring.

The projected third phase, not yet funded by participants, will be a six to ten-story building. The ultimate goal of the experimental structures is a commercial office building with economies to offset the higher energy-saving construction costs.

With the rising cost of electricity, which accounts for about 80 percent of a building's heating and air conditioning expense and with natural gas now too valuable as industrial feedstock to use for space heating, the participants in this commercial building experiment expect solar heating and cooling to be an economic and practical reality by the 1980's, "Mr. Pulver says.

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23616003 Arsenic and Cancer

Continued from Page 15

says he is puzzled by the findings of his company's study. He doesn't see any evidence that people's lives were shortened by exposure to arsenic since the longevity rate among the Allied workers studied was comparable to that of a "healthy" population.

Health Research Group's Sidney Wolfe takes exception to this last observation, noting that longevity rates do not take into consideration the age at which people may have been exposed to arsenic or any other carcinogen. The latency period for lung cancer is twenty years.

The significant thing about the two industry studies, according to Dr. Wolfe and others, is that an exceedingly high proportion of deaths were caused by cancer. "No one thinks longevity is a worthwhile indicator," continues Dr. Wolfe, calling the longevity issue "a typical dodge used to obscure the fact that these people died of cancer."

In addition, says Dr. Wolfe, the Dow and Allied reports provide additional reasons for reducing the standard of exposure to arsenic to zero. Health Research Group, a Washington, D.C.-based consumer organization, takes a consistent position that there is no safe exposure level above zero to any known carcinogen. The HRG position is supported by the National Cancer Institute and, more important to industry, by the Oil Chemical & Atomic Workers Union.

HRG and OCAW have frequently chided OSHA for not taking action on recommendations of workplace safety standards proposed by NIOSH, most recently when it became known last month that during the 1972 presidential election campaign, OSHA assistant Secretary George C. Guenther had proposed holding off on issuing occupational safety standards in order to encourage industry to contribute to the Nixon re-election campaign.

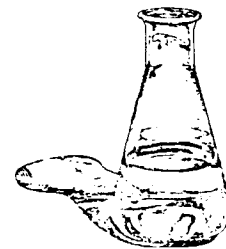
HRG believes that this proposal was carried out and cited the case of arsenic as "particularly illustrative" of OSHA's refusal to act on NIOSH recommendations that exposure levels be lowered.

OCAW's response to the findings of the latest industry reports is predictable. The new data, says OCAW's Steven Wodka, "backs up what many scientists thought all along, namely that arsenic causes cancer. There was plenty of information around about the dangers of arsenic before and we should have had a more stringent standard a long time ago."

OCAW health researcher Jeanne Stellman is also impressed by the Allied and Dow statistics and especially by the incidence of lung cancer revealed, which she notes is several times the incidence of lung cancer among cigarette smokers. Only one in thirty smokers on the average die of lung cancer compared with one out of every 2.2 deaths surveyed in the Allied study and one in 6.2 in the Dow study.

Mr. Wodka says OCAW is considering petitioning OSHA to issue an emergency standard on arsenic. "There's no sense in treating it as any different from vinyl chloride or asbestos," he concludes, "and there's no sense in delaying."

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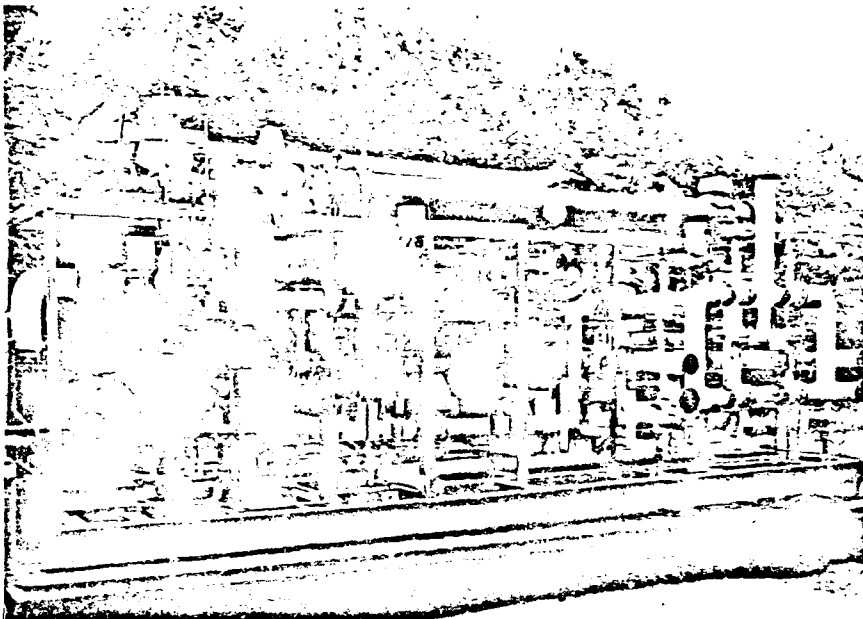
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SKID-MOUNTED monomer recovery unit is headed for installation at Tenneco vinyl plant.

Putting VCM emissions on skids

New methods of controlling VCM emissions are being developed, but allowable level in air still has not been set by OSHA

With the final standard for workers' exposure to vinyl chloride monomer scheduled for promulgation next month by the Labor Dept.'s Occupational Safety and Health Administration, engineering firms and vinyl producers are hard at work exploring alternative methods of reducing plant emissions.

Because no one knows how low the standard will be, the best that plant management can do right now is to improve housekeeping procedures (e.g., tightening leaks). But they have a good idea of what they must shoot for in developing new techniques. OSHA's proposed standard is "no detectable level," which translates to 1 ppm, because of present limitations of measuring equipment.

The industry says it would be forced to shut down if such a standard were enforced, contending that a 1-ppm. limit is technically impossible to meet. It's claimed that 1.7-2.2 million jobs would be eliminated, as would production valued at \$65-90 billion/year. Through the Manufacturing Chemists Assn., the industry has recommended a maximum emission limit of 25 ppm, which would be reduced to 10 ppm. in three years.

Ready for Trial: Among the techniques now under trial is activated carbon adsorption. Calgon, for example, has reported successful studies of monomer ad-

sorption from vent gases. The monomer is regenerated with steam. But vinyl producers say they can't determine how well the system will work commercially until it is proved in major demonstration units.

One such unit, designed, fabricated and skid-mounted by Chemical Design (Lockport, N.Y.), is currently being installed at the new polyvinyl chloride plant Tenneco Chemicals is building at Pasadena, Tex. (also see p. 80). Tenneco's laboratory work indicates that almost all the vinyl chloride monomer can be removed from purge gas streams—with a level of 5 ppm. "possibly" attainable. Whether the same result can be achieved on a commercial scale remains to be seen. Tenneco must obtain an operating permit from Texas Air Pollution Control Board; no problems are expected.

Another method of controlling VCM emissions is offered in the new PVC manufacturing process developed by Robin-tech (Ft. Worth). The technique, called Rocor IKC (in-kettle compound), combines the two commonly used steps—resin making and incorporation of additives.

The company is close-mouthed about details, but claims that PVC made by the process virtually eliminates worker exposure to VCM at the fabrication point. Robin-tech uses the method in its Painesville, O., plant, says it has received word

from the U.S. Patent Office that approval of the patent application on the process will be granted.

Drive for Completion: Stauffer Chemical is looking into new methods of cleaning up monomer from vent gas streams, but also is trying to get down to fundamentals. Executive Vice-President Harold S. Mickley says the company has had a research and development task force at work for months trying to find answers to basic questions such as: "Can you drive the polymerization reaction to completion?"

If it is possible to achieve complete polymerization, the problems of downstream cleanup can be eliminated.

Walter Schlegel, assistant process engineer at Crawford & Russell (Stamford, Conn.), explains that major trouble spots are at four primary points in the manufacturing process: (1) slurry holding tanks, (2) dryer, (3) reactor (during routine cleaning between batches), (4) recovery system for process vent gases.

"Theoretically, you could blow a hurricane of air through the plant and eliminate the worker exposure problem, but that would only transfer the problem somewhere else," says Stauffer's Mickley. In fact, the cleanup problem is complicated, since vinyl makers will have to meet Environmental Protection Agency regulations on air quality outside the plant, as well as OSHA's standard for worker exposure. EPA's standard, which was to have been issued on Aug. 15, still was not ready at *CW*'s press time.

The agency has monitored plants in many locations, has indicated that air quality seems satisfactory, so the cleanup approach is centered on bottling up the VCM as completely as possible within the process.

In the Plant: PVC resin is produced by four polymerization processes: suspension (which is used in more than 75% of the tonnage now made), emulsion, solution and bulk. Polymerization takes place in a reactor (usual capacity: 2,000-5,000 gal., although newer units hold as much as 35,000 gal.). Reaction temperatures are 120-150F; operating pressures, 110-160 psig. The reaction proceeds to about 85-90% VCM conversion, at which time unreacted monomer is removed from the unit. (All plants have VCM recovery systems composed of a series of compressors and condensers.)

The polymerized slurry is removed from the reactor, dewatered in a centrifuge and then dried with a stream of hot air.

All reactors must be cleaned, which is

one point of possible worker exposure. Cleaning frequency ranges from every five batches to 50. Older reactors often are scraped manually. But C&R's Schlegel says that this cleaning method is giving way to high-pressure water and water-detergent systems. Some plants use solvents, such as tetrahydrofuran, dimethyl formamide, or ethylene dichloride, to remove baked-on polymer and absorb unreacted monomer. But this substitutes one problem for another: the solvent must be recovered.

The new, large (e.g., 35,000 gal.) reactors are more easily cleaned than small ones because water jets can be positioned more effectively. Also, larger quantities of resin can be produced before cleaning is necessary.

Perhaps the biggest source of headaches, however, is the cleaning of the huge quantity of air that has been used in drying the resin. For example, a plant may use 40,000 cu.ft./minute of air. The air may be contaminated with only 10-15 lbs./hour of monomer that must be removed after it leaves the rotary dryer. To overcome this problem, vinyl producers are working on methods of removing monomer before the resin reaches the dryer.

Chemical Design suggests another approach: dehydrate air from the rotary dryers to ambient air moisture level and recycle it to the dryers. A bleed of 2,000-2,500 cu.ft./minute could be removed from the recycle stream for cleanup in an activated carbon adsorption system. The company says that without dehydration, an adsorption system to clean up 70,000-80,000 cu.ft./minute of air contaminated with 250-300 ppm. of VCM would require a capital investment of almost \$3 million.

On the other hand, an adsorption system for 2,000-2,500 cu.ft./minute of bleed air contaminated with 665 lbs./hour of VCM would cost \$600,000-700,000. Dehydration equipment would add \$300,000-500,000 to the cost.

The final vent gas streams from vinyl plants can be refrigerated to remove most remaining VCM, but other methods are being investigated.

Remote Operation: Some of the new processing methods that undoubtedly will be developed during coming months may involve remote operation of plants. According to Robert A. Allen, vice-president of World-Wide Construction Services (Wichita, Kan.), technology has been developed to operate new, large reactors from remote, isolated control rooms. The control areas could be 300 ft.

or more from the reaction area.

However, Allen told a group of engineers at an American Institute of Chemical Engineers conference on hazardous materials last month that remote operation could create new problems. Reason: operators would no longer be close to potential trouble spots. He said these problems might be offset by use of closed-circuit television, highly sensitive vapor detectors and microphones that could provide audiomonitoring in the control room.

Vinyl producers already are spending heavily for new monitoring devices, in addition to following general house-keeping procedures recommended by the Dept. of Health, Education and Welfare's National Institute for Occupational Safety and Health. NIOSH developed these recommendations for B.F. Goodrich's Louisville, Ky., plant, where the VCM-cancer link was first discovered in workers.

Of the 24 cases of angiosarcoma, a rare liver cancer, that have been reported, only one involved a worker at a monomer plant (in Sweden). Of the other cases, 20 have been in PVC plants, two in compounding and fabricating operations and one (in West Germany) in an aerosol pesticide container-filling operation that used VCM as a propellant.

No one seems to be certain of the maximum dosage of VCM that produces cancer. Joseph Wagoner, chairman of NIOSH's occupational carcinogen committee, says, "I'm sure 25 ppm. will show cancer." And he warns that there is no way to demonstrate the safe level of a carcinogen (*CW*, July 31, p. 19).

But whether OSHA decides to set the standard at the level recommended by industry, or adopt one that is considerably lower, vinyl producers will have to develop production methods and VCM recovery systems that will fill the bill. Plant shutdowns would seem to be the only other alternative.

Producers and representatives of labor agree that self-contained air-supply packs, similar to those used by astronauts, could not be used in vinyl plants because the workers couldn't function.

And there is no substitute material available to take PVC's place for many applications. As Arthur D. Little (Cambridge, Mass.) puts it: "It would not be possible to duplicate the exact properties of vinyl plastic products by using substitute raw materials."

Whether PVC users will be forced to face up to making do with substitute materials remains to be seen.

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September 18, 1974 CHEMICAL WEEK 71

BFG26611

Showdown on vinyl plant rule presages shutdowns

Newly issued advisory reports hint at compromise in fight to curb vinyl chloride fumes, but battle may continue in court. Industry insists OSHA's proposal would be ruinous

The bitter controversy over worker exposure to vinyl chloride gas may climax on Oct. 5 when the U.S. Dept. of Labor is expected to set permanent standards for the 17 U.S. plants that produce the monomer, the 37 that polymerize it to make polyvinyl chloride resins, and the thousands of plants that mold, extrude and otherwise shape those PVC resins into plastic pipe, vinyl flooring, house siding and phonograph records.

The controversy has raged since last January, when medical data apparently established a link between workers' exposure to vinyl chloride monomer (VCM) and angiosarcoma, a rare liver cancer.

And last week the scores of chemical and plastic companies that have a stake in this \$3-billion/year business were given some inkling of whether the government will stay with the 50-ppm. emergency standard, adopt the proposed "no detectable level"

limit or move to some compromise position. Whatever standards are set could determine the profitability of producing and processing vinyl compounds in the U.S. for many years and are likely to be attacked in the federal courts, either by the companies or the labor unions involved.

Conflict: As to exactly what standards will be promulgated next week, various indications—sometimes contradictory—can be found in three newly issued reports:

■ **Foster D. Snell's** final report to the Occupational Safety and Health Administration on the economic impact of the agency's proposed VCM exposure standards. A principal conclusion: "achieving no detectable levels . . . is judged not feasible, both in PVC and VCM sectors."

■ **The Occupational Health and Safety Administration's** final environmental impact statement on the physiological ef-

fects of the proposed standard. This report does not discount the possibility of a level higher than the 1 ppm. implicit in "no detectable level." But it concludes that anything higher is a risk to workers. "Despite significant cost increases that may occur, the high demand for PVC resins is likely to continue," the report states.

■ **The Environmental Protection Agency's** notification that within nine months it will set VCM plant emission standards that could add 4% to the cost of PVC. This would seem to preclude the engineering possibility of venting all the in-plant VCM leaks to the atmosphere.

Double Negative: OSHA's proposed goal of operating monomer and polymer plants at no detectable level of vinyl chloride exposure is "not feasible," according to Snell. Moreover, the firm's analysis indicates that the U.S. industry would com-

els; and there are no technology transfer opportunities to permit development of design for no detectable levels in new plants. Moreover, Snell says that because PVC manufacture is a batch operation, emissions couldn't be completely eliminated.

Something to Live With: Those conclusions would seem to support a compromise regulation that the vinyl makers could live with—perhaps not too happily. But probably because of the imminence of the Labor Dept.'s new regulations, industry representatives were reluctant to discuss Snell's final report, noting that they haven't had time to examine it.

Nor did they have much time to react to Snell's preliminary report, which contained pretty much the same data used in the final report but did not contain any conclusions. OSHA issued the preliminary report Aug. 28, called for response by Sept. 6. Nevertheless, industry leaders submitted comments, and these were generally negative and caustic.

One point of contention in the preliminary report was the use of Firestone data for bringing a PVC plant into compliance with a no-detectable-level standard. Firestone, Snell reported, was the only company that said it could meet such a standard.

Firestone replied that studies of its polymerization plants in Pottstown, Pa., and Perryville, Md., actually indicated a contrary judgment.

Declares a Firestone executive: "Independent of economic considerations and despite enormous equipment, engineering and process changes at both facilities, costing in excess of \$50 million, it is not possible to achieve the drastic exposure levels required by the proposed standard, based on engineering controls and technology that now exist."

Firestone, No. 5 in PVC output, has September 25, 1974 CHEMICAL WEEK 15

OSHA's vinyl standards impact: higher costs, fewer plants

Proposed VCM exposure standard* (ppm.)		Increase in average unit costs (cents/lb.)			Time needed to comply (months)	Proportion of industry endangered ²
Maximum	Time-weighted average	Direct	Loss of productivity	Total ¹		
Monomer plants						
50	15	0.04	0.03	0.07 ± 10%	0	0%
25	15	0.09	0.03	0.12 ± 40%	24	0%
10	2.5	0.17	0.15	0.32 ± 40%	36	0%
"No detectable amount"		—	—		Not feasible	100%
Polymer plants						
50	—	0.19	0.35	0.54 ± 20%	0-6	Negligible
25-40	15-25	0.36	0.49	0.85 ± 35%	30	4%
15-25	10-15	0.90	0.70	1.60 ± 50%	30	26%
"No detectable amount"		4.01 ³	3.07 ³	7.08 ± 75% ³	30-48 ³	100%

* Vinyl chloride monomer (VCM) content, expressed as parts per million, in the air to which employees are exposed. ¹ With estimated range of variance for individual plants, based on partial statistical analysis of data. ² Percentage of capacity that management would seriously consider shutting down. ³ Based on Firestone's estimates; actual compliance is not considered feasible. Source: Foster D. Snell, Inc.

pletely collapse under that restrictive standard, with all producers indicating they would have to close their plants.

The study offers several reasons for reaching these conclusions: technology to eliminate VCM leaks and fugitive losses is not available; existing plants have not been designed for total VCM containment; there has been no operating experience in maintaining very low VCM lev-

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some differences with the rest of industry on the exposure level standards that would be manageable. Industry generally supports the Society of the Plastics Industry's proposal: that the present temporary emergency standard of 50 ppm. be lowered in several stages to 25 ppm. for PVC plants by Oct. 5, 1975, with further imposition of a time-weighted average limit of 10 ppm. Standards for VCM production, says SPI, could be more restrictive—10 ppm. by October 1975, and a time-weighted average (twa.) of 5 ppm.

T.C. Walker, president of Firestone Plastics, says that a "safe and medically sound—as well as technologically and economically feasible—standard" is 40 ppm. maximum exposure and 25-ppm. twa.

Snell's analysis offers data on several alternatives, maintaining the SPI distinction between VCM and PVC plants (*table, p. 15*). Cost data indicate that VCM makers can manage with a 10-ppm. limit and a 2-5-ppm. twa. without closing any plants. Meeting such a standard would increase their average unit manufacturing cost by an estimated 0.32¢/lb., which is about 4-5% of the present range (7-10¢/lb.) of list prices for various grades of VCM.

For polymer producers, however, some plant closings may be necessary when the present emergency standard is tightened. According to the Snell study, at an exposure limit of 25-40 ppm. and a 15-25 twa., 4% of the existing PVC plants may have to be shut down. This might not be too disastrous, considering that 58% of the industry's plants are more than 10 years old, and only 8% are less than five years old.

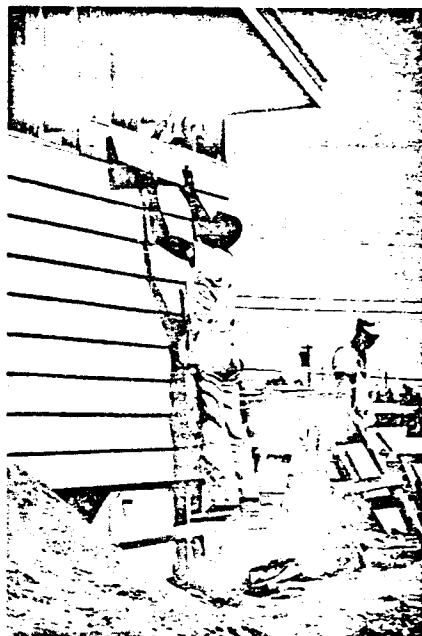
But for an exposure limit of 15-25 ppm. and a twa. of 10-15 ppm., 26% of the PVC plants could face the axe. Snell's survey indicates that with this standard, unit costs of PVC would increase 1.6¢/lb., or about 4-8%, at those plants that can take the needed engineering changes. At some older, smaller batch operations, the companies say it would be impossible to reach such a low exposure level without building a new plant. At certain plants, Snell believes, the additional cost might be 50% more or less than the 1.6¢/lb. average.

Schedule Makers: Snell estimates it will take VCM plants up to three years to achieve what it considers the lowest achievable level. For PVC plants, the estimate is two and a half years.

This is based on engineering estimates of installation time for various kinds of apparatus to reduce exposure levels at

PVC plants. Examples: major ventilation system improvement, 18 months; replacement or reconditioning of reactors, 18-24 months.

Overly Optimistic? Some companies contend that these estimates are overly optimistic in light of today's materials shortages and delivery delays. Observes a Firestone executive: "Individual company confidence in being able to attain compliance with even the SPI recommendations has been eroding as lead times for obtaining equipment expand, as capital costs rise rapidly, and as the prospect for financing these projects becomes dimmer."



VINYL SIDING costs will rise as makers meet new in-plant and emission standards.

Industry criticism has also centered on Snell's projection of cost data to meet projected standards. The figures are said to be heavily weighted in favor of newer plants and suspension homopolymerization units in warmer climates. Such plants could probably be most readily adapted to meet a more stringent exposure standard.

Separate Standards: The proposed no-detectable-level standards would be applicable to VCM and PVC plants as well as fabricators. But the Snell study follows the SPI proposal of separate standards for VCM and PVC plants.

Reasoning is based on relative ease of controlling emissions at VCM plants, which are generally closed systems, operating in the open air. Leaks may occur around pump packings, during samplings or maintenance operation, or at tank-car

loadings. The batch operation of PVC plants involves continuous emptying and recharging of autoclaves and frequent inspections and cleaning out of these reactors. Chance of VCM exposure in these plants is high even in the packing areas.

While separate standards would seem reasonable to manufacturers, the practicality of this approach is limited. It's unlikely that labor groups, strongly in favor of the no-detectable level and opposed to the concept of a threshold level for any carcinogen, could accept different exposures for workers in various plants.

Outside Plant: If the vinyl producers solve their in-plant exposure problems, they will still have to deal with monomer gas escaping from the plant. EPA Administrator Russell Train said last week that his agency will set standards for vinyl chloride plant emissions by next June. And without firm data on health effects of VCM at various levels in the atmosphere, Train is proposing that the standards be based on "best available technology."

EPA's survey of air and water around 10 PVC plants indicated VCM air levels of 1 to 2 ppm. Through those emissions, the agency estimates, PVC plants are losing monomer at the rate of 200 million lbs./year.

With controls, EPA says emissions from PVC and VCM plants could be cut 75% and 90%, respectively. Capital outlays for these controls are put at \$80 million for the industry as a whole, with operating expenses estimated at some \$40 million/year.

John Nelson, vice-president for manufacturing at B.F. Goodrich Chemical, approves of Train's analysis, especially the statement that there is "no imminent hazard" from VCM exposure in the atmosphere.

But if OSHA's no-detectable-level proposal becomes the law, the vinyl chloride industry might have to re-evaluate its domestic production. Although industry spokesmen have warned of extensive shutdowns if such a standard is adopted, OSHA's environmental impact statement merely suggests that the costs will be high but will be passed on to the consumer, and that the time needed to reach the standards would be long.

But this report also suggests that "in the long run U.S. companies might find it profitable to build plants abroad." Clearly, this will depend not only on traditional market and raw-material logistics but also on whatever in-plant and emission standards are put in force in the U.S. and other nations.

New suit for dye makers

Calina Industries, a New York-based warp-knit fabrics manufacturer, filed suit this month against eight of nine big dye makers indicted for price fixing by a federal grand jury in July (*CW Business Newsletter*, July 24). The Calina suit is a class action brought on behalf of "all purchasers of dyes from one or more of the defendants or their coconspirators" since early 1970.

Defendants include Du Pont, Baychem (now Mobay Chemical), Allied Chemical, American Cyanamid, BASF Wyandotte, Ciba-Geigy, Crompton & Knowles and GAF. American Color & Chemical (jointly owned by North American Philips and Koppers) was the only company not named in the civil action.

Like the federal complaint, Calina's suit charges that Du Pont officials began sounding out other dye makers on the possibility of an across-the-board price boost in 1970 and that the defendants, along with some other firms, conspired to push through price increases shortly thereafter.

Calina says that as a result of the alleged conspiracy, it and others in the class action have been, and continue to be, overcharged for the dyes they purchase. The suit seeks treble damages and urges the court to enjoin the dye makers from future conspiracy on pricing.

A spokesman for Du Pont says his company has not had time to thoroughly study the Calina complaint. The primary area of concentration is still the federal complaint, he adds.

Lawyers for Calina declined to give further details.

Bitter news for Abbott

Last November, Abbott Laboratories called a press conference to report that the company was formally petitioning the Food and Drug Administration to reverse its 1969 ban on marketing of cyclamates (*CW*, Nov. 21, 1973, p. 15). Spokesmen presented 16 volumes of test reports—stacked impressively on a table—which they said would convince FDA that cyclamates were safe.

Last week, however, Abbott's high hopes were jolted. FDA informed the company that it considered the test reports inconclusive and recommended that Abbott withdraw its petition. FDA said it wanted more convincing data, such as lifetime animal feeding studies, which could require several years to conduct.

"We have concluded that questions

about the cancer-causing potential of cyclamates still are unresolved," FDA Commissioner Alexander Schmidt said.

Abbott Executive Vice-President Charles S. Brown responded that the additional research requested by FDA is "neither reasonable nor required by scientific judgment." He requested a meeting with FDA officials as soon as possible.

Partly in anticipation of a favorable decision by FDA, Abbott restarted cyclamate production at its North Chicago, Ill., plant in January. Most of the output so far has gone to customers in several European countries where no bans exist. These customers had been supplied from pre-ban stockpiles.

FDA's thumbs-down may short-circuit Abbott's plans to send similar petitions to governments of other nations that have banned cyclamates. The company had been holding off until it got a reply from FDA.

Potential cyclamate sales—which the company had expected to reach \$16 million/year, the pre-ban level—have not been included in sales estimates for 1974 or 1975, Abbott said.

No letup in price hikes

The wholesale price index for chemicals and allied products climbed to a seasonally unadjusted 158.5 in August from 148.4 in July (1967=100), the Dept. of Labor's Bureau of Labor Statistics reported last week. The corresponding August 1973 figure was 111.

Leading the parade in price hikes for specific chemical commodities were edible fats and oils, which moved from an index of 347.4 in July to 380.2 in August, and plastic resins and materials, which rose from 147.5 to 160.7.

Other big gainers were agricultural chemicals and products, which jumped from 131 in July to 142 in August; and industrial chemicals, from 155.5 to 167.8.

Some CPI segments registered more modest price gains. Examples: drugs and pharmaceuticals edged up to 115.3 in August from 112.7 in July; and prepared paint to 152.3 from 149.7. One commodity that scarcely changed was paint materials: to 155.9 from 155.4.

Among other related products, pulp, paper and allied products rose from 153.3 in July to 162.9 in August; nonferrous metals, from 198.4 to 200.4; refined petroleum products, from 239.4 to 243.9.

For all commodities, the wholesale price index moved up to 167.4 in August, 17.8% above the August 1973 level.

Compliance complaint

On Oct. 5, the Occupational Safety and Health Administration is slated to issue a standard for worker exposure to vinyl chloride (*also see p. 66*). As that date approaches, controversy is erupting over an OSHA-sponsored economic impact report, issued in preliminary form late last month by Foster D. Snell, Inc.

Snell polled 23 polyvinyl chloride producers on the costs of complying with various hypothetical exposure standards and indicated that imposition of the "no detectable level" standard, proposed by OSHA in May, might well close down the entire industry. The final Snell report is scheduled to reach OSHA this week.

Firestone Plastics has asked OSHA for a chance to cross-examine the Snell researchers, charging the report misrepresents the firm's assessment of compliance costs. Firestone's protests won't delay issuance of the standard but could raise the level of controversy.

"Our biggest criticism of the report," says Firestone Plastics President Todd Walker, "is that it said Firestone was the only company with the ability to meet the no-detectable-level standard. The fact is that our whole testimony at the [OSHA] vinyl chloride hearings was directed at saying it couldn't be done." Walker also criticized Snell for coming up with "no hard data."

Snell Vice-President Joseph Nemec, however, says his firm will have no response until after its completed report is in OSHA's hands.

According to the preliminary report, all 23 PVC companies polled said they could reach a 50-parts-per-million standard immediately; five said they could manage 25 ppm. by the end of 1976, seven by the end of 1977 and four by the end of 1978.

Meanwhile, Ralph Nader's Health Research Group has criticized the report as appearing to accept industry's blanket assertion that the no-detectable limit is not feasible and that it focused too much on the direct impact on the PVC makers, not on the over-all economy. "This myopic concentration on compliance costs disregards entirely the personal, social and even industrial costs of continued disease," the group maintained.

Odds seem high that OSHA eventually will issue a 5-ppm. standard. Neither industry nor labor is expected to be satisfied with such a decision.

"There's a lot of pressure on OSHA from the top to ease off the no-detectable-level standard," says one AFL-CIO health official.

Matt - For RLH Jm

PVC RULING EXPECTED TO DISRUPT PLASTICS INDUSTRY

BY LEWIS SILVERMAN

NEW YORK, SEPT 23 - THE DEPARTMENT OF LABOR EARLY NEXT MONTH IS EXPECTED TO HAND DOWN A WORK SAFETY STANDARD THAT COULD ULTIMATELY RESULT IN THE LOSS OF AS MANY AS 2.5 MLN JOBS AND 1,000 MLN DLR5 IN ANNUAL REVENUES TO THE PLASTIC AND CHEMICAL INDUSTRY IN THE U.S.

AND ACCORDING TO THE SOCIETY OF PLASTICS INDUSTRY, THE ORDER SETTING THE MAXIMUM PERMISSIBLE LEVEL OF VINYL CHLORIDE TO WHICH WORKERS CAN BE EXPOSED AT BEST WILL CAUSE TEMPORARY PLANT SHUTDOWNS AND COULD HALT PRODUCTION OF POLYVINYL CHLORIDE.

IN ANY EVENT, THE DECISION IS EXPECTED TO BE A CONTROVERSIAL ONE, SINCE QUESTION HAS BEEN RAISED OVER A CANCER THREAT IN POLYVINYL CHLORIDE.

PRESENTLY THERE ARE ABOUT 22 COMPANIES, OPERATING 50 PLANTS IN THE U.S., THAT PRODUCE THE GASEOUS VINYL CHLORIDE, WHICH SINCE ITS COMMERCIALIZATION IN 1930, HAS BEEN A KEY ELEMENT IN MAKING POLYVINYL CHLORIDE (PVC), A RESIN USED IN THOUSANDS OF PRODUCTS.

NORE 0954

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PVC RULING (2)

THE LARGEST PRODUCER OF PVC IS B.F. GOODRICH CO, BUT OTHER COMPANIES--FIRESTONE TIRE AND RUBBER CO, TENNECO INC, GOODYEAR TIRE AND RUBBER CO AND DOW CHEMICAL CO--COULD BE SERIOUSLY AFFECTED BY THE RULING WHICH WILL BE SET BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

UNTIL THE DEFINITIVE STANDARD IS SET BY OSHA, THE INDUSTRY IS OPERATING UNDER AN AVERAGE INTERIM LEVEL OF 50 PARTS PER MILLION ALLOWABLE IN THE AIR.

BUT OSHA LAST YEAR TRIED TO COME DOWN HARD ON THE INDUSTRY, ACCORDING TO THE SOCIETY OF PLASTICS, WITH A "COMPLETELY UNREALISTIC AND UNATTAINABLE" PROPOSAL, WHICH AMOUNTED TO "ZERO-PARTS-PER-MILLION."

THE INDUSTRY COUNTERED WITH A RANGE OF 25 TO 40 PARTS PER MILLION, ALTHOUGH WARNING OF WIDE-SPREAD PLANT CLOSINGS AS A RESULT OF COSTS INVOLVED IN MEETING SUCH STANDARDS.

WITH SOME 5,000 MLN POUNDS OF PVC PRODUCED EACH YEAR IN THE U.S.--ABOUT 10 TO 20 PCT OF TOTAL PLASTIC OUTPUT IN THE COUNTRY--THE SCOPE OF THE RULING IS OMINOUSLY CLEAR, THE INDUSTRY SAID.

MORE 0957

✓
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23621002

PVC RULING (3)

THOSE IN THE INDUSTRY SEEM LESS THAN
OPTIMISTIC AS TO THE OUTCOME OF THE CONTROVERSY
AND THE ALTERNATIVES TO WHAT THEY WOULD CONSIDER
"AN UNREALISTIC" OSHA STANDARD.

IN A RECENT INTERVIEW, UNIROVAL INC
PRESIDENT DAVID BERETTA SAID THE DECISION, IF
LOWER THAN THE CURRENT INTERIM STAN
PVC RULING (3)

THOSE IN THE INDUSTRY SEEM LESS THAN
OPTINISTIC AS TO THE OUTCOME OF THE CONTROVERSY
AND THE ALTERNATIVES TO WHAT THEY WOULD CONSIDER
"AN UNREALISTIC" OSHA STANDARD.

IN A RECENT INTERVIEW, UNIROVAL INC
PRESIDENT DAVID BERETTA SAID THE DECISION, IF
LOWER THAN THE CURRENT INTERIM STANDARD, WILL
INEVITABLY CAUSE "A REAL SHAKE-OUT, ESPECIALLY
WITH MARGINAL COMPANIES," IN THE FIELD.

MOREOVER, ACCORDING TO THE SOCIETY OF
PLASTICS, THERE IS NO SUBSTANCE THAT COULD
EFFECTIVELY REPLACE PVC.

REUTER 1008

✓
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23620003

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FEA Aims at 'Simplification' In Petroleum Pricing Proposals

Major changes have been proposed by the Federal Energy Administration in its petroleum pricing regulations in order to "simplify and clarify price regulations while retaining the essential concepts of the regulations." It is the first major revision FEA has proposed since it received the authority to control prices last December.

US Chemical Companies Gain in Overseas Profit

The chemical industry had a profit yield of 6.3 percent on its foreign operations last year, a gain of 3.3 percent over 1972, according to a study by Business International Corporation.

The study, conducted annually by the New York-based research organization, covers nineteen chemical companies with foreign net earnings of \$328.2 million based on foreign net assets of \$2.013 billion. Domestic net earnings were \$681 million on domestic assets of \$5.246 billion, or a return of 13 percent.

Among major US bulk chemical producers covered by the study, Dow Chemical Company ranks highest in foreign profitability (26.1 percent), followed by American Cyanamid Company (24.1 percent), Stauffer Chemical Company (19.6 percent), Monsanto Company (12.6 percent) and Union Carbide Corporation (11.7 percent).

SPI Hits VCM Study, Calls Cost of Changes Underestimated by Snell

The Society of the Plastics Industry has taken issue with a number of the facts and conclusions contained in the detailed economic impact study done by Foster D. Snell of the effects of the proposed vinyl chloride exposure rule by the Labor Department.

SPI's views were contained in a document filed with OSHA last week on the preliminary Snell study.

The cost estimates contained in the Snell study for accomplishing certain objectives and/or the achievement of set levels of oc-

Continued on Page 42

Borden Awards Contract For Sulfur Dioxide Control

Agricultural Chemicals Division of Borden, Inc., has awarded a \$3.5 million contract to Monsanto Enviro-Chem Systems, Inc., for installation of the Enviro-Chem integral interpass absorption system at Borden's Smith-Douglass sulfuric acid plant in Piney Point, Fla.

Construction will begin before the end of the year and completion is scheduled for mid-1976.

A Borden spokesman says the modifica-

Continued on Page 49

Hearings will be held in Washington September 19, September 30 and October 1 on the proposed changes and the special propane rule issued August 5.

FEA Administrator John C. Sawhill noted that the new proposed regulations have retained the provisions for dollar-for-dollar passthrough of increased product costs and the limitations of profit margin for the products covered and that this will be an "essential element of the FEA's continuing price policy."

The amendments include:

- A new subpart governing prices for natural gas liquids (NGL), including propane produced from NGL, "to provide a better pricing mechanism and eliminate confusion as to how the current regulations apply to NGL."

The proposed regulations would allow NGL to be priced at its May 15, 1973 selling

Continued on Page 23

Carbide, Wimpey Join To Sell 'Unox' in UK

Union Carbide Corporation and George Wimpey & Co. of the UK have formed a new concern, Wimpey Unox Ltd., to market Carbide's "Unox" wastewater treatment system in the UK and Ireland.

Under the agreement, Union Carbide will provide technology covered by wastewater treatment patents and Wimpey will provide marketing and engineering expertise.

The "Unox" system, developed by Carbide's Linde Division, employs proprietary processes and apparatus with oxygen gas to improve the secondary activated sludge

Continued on Page 18

pected to fall below the average growth rate for ethylene.

These projections were made by Dr. Bert Struth, of Chem Systems, Inc., at the national meeting of the American Chemical Society held in Atlantic City, N.J., last week.

Total demand for ethylene in 1980 should reach 37 billion pounds. Nine projects to build ethylene facilities with a total capacity of 8.8 billion pounds, according to Dr. Struth, have already been announced, leaving another 6.5-billion-pound capacity

Acrylonitrile Expansion Set by Monsanto in UK

Monsanto Company will undertake a major, two-part expansion program for its Seal Sands Plant at Teesside, England.

The multi-million-dollar expansion, scheduled for completion in 1977, will provide raw materials needed to meet growing requirements for the manufacture of nylon, "Acrilan" acrylic fibers and "Lustran" ABS/SAN plastics.

The first part of the program calls for nearly tripling capacity of the existing acrylonitrile manufacturing operations. A new unit with an initial annual capacity of 420 million pounds (190,000 metric tons) of acrylonitrile will be built adjacent to the present plant. Total capacity of the Seal Sands Plant will exceed 650 million pounds (300,000 tons).

The second part of the program calls for construction of plants to produce adiponi-

Continued on Page 49

Dynachim, P-L Biochemicals In Concert on Prostaglandin

P-L Biochemicals, Inc., Milwaukee, Wisc., and Dynachim SA of Paris, France, have entered into an agreement for the development and promotion of prostaglandin products in the US.

Dynachim reportedly pioneered the pro-

FDA Grades Bactericides

The Food & Drug Administration last week took a major step toward setting new regulatory criteria for the safety and effectiveness of bacteria-killing ingredients in deodorant soaps, medicinal soaps and first aid products with the publication of a report by FDA's Anti-Microbial Review Panel. The report is based on a two-year review by non-FDA scientists.

The panel reviewed hundreds of ingredients which have been marketed and promoted for their germ-killing effectiveness ranging from iodine to pine tar.

Identified by the panel were nineteen ingredients for which there was some evidence of anti-microbial activity. Five of these - benzalkonium chloride, meth-

yl benzethonium chloride, hexylresorcinol, benzethonium chloride and tincture of iodine - have been shown to be safe and effective.

On the basis of the findings, FDA has proposed that tri-bromosalan (TBS) and closely related drugs be prohibited from future use in non-prescription drugs and cosmetics. The reason given is a concern about skin inflammation to some users of products containing TBS after exposure to sunlight. One of the largest users of TBS was anti-bacterial soaps which have been reformulated.

FDA said that it is unaware that any other chemicals in the TBS family have been used in non-prescription drugs or

Continued on Page 49

23621001

September 16, 1974 CHE

BFG26619

Chemical Marketing Reporter

OF CHEMICALS

Olefins, Aromatics

23621002
Continued from Page 3

mbia	ARAGONITE—40,193 long tons (Marcona Conveyor) Ocean Cay, August 16
ins	BAUXITE—12,200 tons (Havjarl) Chaguaramas to Mobile, August 20
larry	6,904 tons (Havjarl) Linden to Mobile, August 20
Int	38,148 tons (Buckeye) Tembladora to Mobile, August 22
men,	33,141 long tons (Er Scaldia) Port Rhoades to Baton Rouge, August 16
ific	32,862 long tons (World Argus) Port Rhoades to Baton Rouge, August 20
nical	CASEIN—1 cmt (Austral Entente) New Zealand Milk Products (Austral Entente) Wellington, August 23
orce)	CHESTNUT POWDER—400 bgs (Birkenfels) Marseille, August 27
10	COBALT, POWDER—10 dms (Scholar) Liverpool, August 27
lbs)	COCONUT OIL—500 long tons (Stolt Span) Davao City, August 23
ly 12	1,120,000 lbs (Stolt Victor) Manila, August 26
ific	1,109,148 lbs (Stolt Victor) Legaspi, August 26
bishi	CRYOLITE—2,000 bgs (Birkenfels) Marseille, August 27
1 bgs	DIPENTAERYTHRITOL—1,000 bgs (Hung Ming) Yokohama, August 24
ly 11	2,000 bgs (Korean Trader) Yokohama, August 26
5 AJ	FERROMANGANESE—6,499 metric tons (Paros) Durban to Baton Rouge, August 19
ly 10	GRAPHITE, SYNTHETIC—9 crts (Korean Trader) Yokohama, August 26
Chas	ISOBUTANOL—494 metric tons (Grenanger) Kobe to Galveston, August 12
July	MANGANESE ORE—25,092 metric tons (Agios Giorgis) Port Elizabeth to Baton Rouge, August 19
10	MENTHOL, CRYSTALS—4 cmts (Delta Norte) Paraguaray, August 26
usan	OLIVE OIL—25 dms (Joseph Lykes) Cadiz, August 27
Sin-	PALM OIL—500,048 long tons (Stolt Span) Singapore, August 23
lloyd	1,484,597 long tons (Stolt Span) Pt Kelang, August 23
lvent	SILICON MANGANESE—143 dms (Korean Trader) Yokohama, August 26
8	19,716 lbs (Korean Winner) Yokohama, August 26
dent	SULFAMIC ACID—800 bgs (Hung Ming) Kobe, August 24
iday,	SULFURIC ACID—7,519 kilos (Bow Lind) Gdansk to Baton Rouge, August 16
rties	TALC—121 cts (Union Enterprise) Kobe, August 26
c	TITANIUM DIOXIDE—1,600 bgs (Maltesholm) Hamina to Mobile, August 19
ad-	UREA—14,522 short tons (Triton) Sluiskil to Baton Rouge, August 19
gen,	ZIRCON SAND—4,089,000 kilos (Lotte Skou) Brisbane to Baton Rouge, August 15
ssoc	
mbia	
long	

Atlanta Chemical Moves

Atlanta Chemical Company has relocated its offices to 425 Park Avenue, New York 10022. The new telephone number is 421-4600 and the telex number is 147186.

tract prices for propylene run from 6 cents to 8 cents per pound, with spot levels ranging from 10 cents to 20 cents according to type of material.

When will it level out? "Never," according to Mr. Baggett, who pointed out to the group that the traditional cyclic factors affecting the propylene business will continue to do so. "It will not go up to 20 cents," he stated, citing an upper barrier based on gasoline values.

Mr. Ericsson came up with a diverse picture of the current price situation for butadiene. One company charges 15.9 cents per pound, f.o.b. works.

Another US producer posts a 27-cent-per-pound price. The ECSI chief pointed out that "There isn't any of that 27-cent stuff. He uses practically all of it himself."

Other butadiene prices, as to producer: 16 1/4 cents f.o.b., 17 1/4 cents delivered and 18 1/4 cents f.o.b. A domestic producer who also offers imported material averages imports into his price structure and charges 17 cents to 20 cents, according to monthly price fluctuations.

FREIGHT CHARGES ADDED

"Importers," noted Mr. Ericsson, "take the straight cost of f.o.b. material in Europe, have added the cost of ocean freight and passed it right straight through to the customer after adding a half cent at the terminal and adding necessary rail freight." "Until recently," he said, "this price was 28.4 cents a pound."

There's not a great merchant market for butadiene, and the posted prices represent less than 30 percent of total production, he says, noting that "even those with none to offer have a posted price."

Mr. Lederer told the audience that in his reckoning, the current price of naphtha in Europe was around \$160 per ton on spot, with ethylene, propylene and butadiene more difficult to assess.

C-2's and C-3's are about \$300 per ton in his estimation. A shipment on spot of C-4 material to a neighbor who needs it might bring \$400 per ton now. Contracts are all on a negotiated basis and very hard to pin down.

Mr. DeWitt, reviewing the benzene pricing situation, pointed out that "today contract prices range from 75 cents per gallon to \$1.05 per gallon with spot prices still higher at \$1.15 per gallon and up."

He hastened to indicate, however, that

the spot price is now falling, and over the near term into early 1975 it could drop to 75 cents to 80 cents, again rising to about \$1.00 per gallon at the end of 1975. (For additional details regarding Mr. DeWitt's views on the benzene market, see pg. 5).

All the panelists generously qualified their quotation of spot and contract prices with phalanxes of contingencies, but nonetheless were able to give a clear picture of what's going on right now — which is what the audience came to hear.

Earlier in the day, Mr. Baggett, speaking on propylene, said that only two years earlier the olefin could not be discussed as a world commodity. Now, things are different.

Summing up, he pointed out that propylene has become a world commodity because a need will exist in various world areas in the next few years. This need will be to move propylene into the US in 1975 and early 1976, and to provide outside propylene for Europe and Japan in 1976 and 1977.

A second reason for propylene becoming a world commodity is that the price structure for propylene has changed with freight being a smaller percentage of the delivered cost.

SPI Hits Study

Continued from Page 7

occupational exposure to VCM, SPI said, "are substantially understated."

Many of the cost factors necessary to that type of analysis have not been made or even referenced, SPI said. It added, that the report, for example, did not address the costs of some companies reducing the residual monomer content of various resins.

Similarly, it said, the economic impact of the inevitable Environmental Protection Agency regulations for control of vinyl chloride emissions were not considered.

The potential effects of actual plant closings expected to occur should the permanent standard ultimately set a very stringent level of occupational exposure to VC are also not detailed, SPI said, even though such would certainly be expected to alter the supply-demand outlook.

SPI also questioned the price tags attached by the Snell study for compliance. Use of absolute figures is not meaningful, it said.

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BFG26620

More research needed

Air-emission standard for vinyl chloride near

By JERRY HICKS

Continued from Page B1

WASHINGTON — The Environmental Protection Agency (EPA) announced yesterday it will establish an air-emission standard for vinyl chloride, a chemical believed to cause a rare liver cancer that took the lives of at least six persons who had worked at the R. F. Goodrich Chemical Co.'s Louisville plant.

The agency's standard would control how much vinyl chloride the plant could emit into the air around it. Another federal agency, the Occupational Safety and Health Administration (OSHA), is expected to set a permanent worker-protection standard early next month to control the level of vinyl chloride inside the plant.

OSHA has already set a temporary standard of 50 ppm (parts per million), but its final standard is expected to be much lower.

It is not yet known what level of the chemical would pose an imminent health hazard. The Louisville workers who died of the cancer were exposed to vinyl chloride at the plant for a number of years.

More research needed

More research in the next few months will be needed before the EPA can determine what its standard should be, said its director, Russell E. Train. Train said it could be up to eight months before the standard is set.

The agency has had no vinyl-chloride standard up to now because the chemical was never listed as a health hazard until its first angiosarcoma deaths were re-

ported by R. F. Goodrich last January.

Since then, R. F. Goodrich has reduced the level of vinyl chloride gas, which is used to make plastics, below the OSHA standard. But last week the Louisville Jefferson County Air Pollution Control Board gave the company permission to increase its vinyl chloride by up to 75 per cent, temporarily. By March 1975, R. F. Goodrich officials say, they will have installed pollution controls at the plant to cut the vinyl-chloride level below what they hope the government will set as standards.

The EPA is well aware that there is no apparent danger that emission from the plant is causing a health risk for those who work or live in the nearby area. But it is concerned that if vinyl chloride emission gets too high, it will push the air's general pollution level into a danger zone. Also, without a standard for outside the plant, some companies might leak more of the chemical into the air when controlling the level within the plant to meet OSHA standards.

The EPA said its standard would affect 13 vinyl-chloride-monomer and 37 polyvinyl-chloride-resin manufacturing plants (such as R. F. Goodrich).

Task force presents report

The agency's decision to make vinyl chloride a priority chemical was based on a series of recommendations presented to it last week by a seven-month-old task force.

The task force also suggested that

See U.S. TO SET

Page B1, col. 1

U.S. to set vinyl chloride air-pollution standard soon

Continued from Page B1

there was a possible need for a standard for some 2,000 polyvinyl-chloride fabricating facilities, though they account for only 5 per cent of all vinyl chloride emissions.

The task force based its report primarily on research conducted around nine chemical plants across the country, including R. F. Goodrich's Louisville plant.

The highest emission of the nine plants was found in Louisville, a reading of 33 ppm. But the task force points out that averages at that site, which is listed as residential/industrial, were between 3 ppm and 1 ppm.

The EPA adopted all other recommendations of its task force.

Other policies announced by Train yesterday include:

• Development of a standardized method of monitoring levels of vinyl chloride.

• Additional monitoring of general air pollution at plant surroundings.

• More study of all leakage points in manufacturing process.

• Monitoring of drinking-water supplies that could be contaminated by polyvinyl-chloride discharges from nearby polyvinyl-chloride plants.

The task force also recommended that federal agencies concerned with vinyl chloride develop an interagency mechanism to deal with overall problems associated with the plastics industry.

It also urged that industry take steps to lower vinyl-chloride levels voluntarily before standards are set.

The task force said the EPA and OSHA should not use different standards for measuring the imminent hazard level. Close cooperation will be required between the agencies, the task force report states.

The task force also gave strong support to the toxic substances control bill now before the Congress, which would give the EPA the right to require industry to make pre-market tests of possible dangerous new chemical products.

To date, 25 cases of angiosarcoma have been identified worldwide in workers exposed to vinyl chloride. Investigation has yet to show whether it has caused the death of anyone not working inside a plant with the chemical.

Also affected by yesterday's announcement will be the R. F. Goodrich plant at Calvert City, Ky.

23623001

THE WASHINGTON POST Wednesday, April 24, 1974 A 3

EPA Plans to Cut Vinyl Chloride Emissions

United Press International
The Environmental Protection Agency plans to cut drastically the 200 million pounds of vinyl chloride escaping into the air from industrial plants and to determine whether any of the cancer-causing chemical threatens the nation's drinking water supplies.

The agency announced the actions Monday in releasing a report on the vinyl chloride problem. The report was prepared by a task force set up earlier this year following disclosure of several deaths among workers exposed to the chemical at vinyl chloride plants.

The report concluded there is no scientific evidence to indicate air pollution from vinyl chloride plants poses an "imminent hazard to people living near these plants." But, EPA Administrator Russell E. Train told a news conference, "It is clear that some hazard does exist, and that our population deserves the protection afforded by regulatory action."

Train said it would take from nine months to one year to draw up rules designed to cut down such air pollution. The report estimated that emissions from the 15 vinyl chloride plants around the country could be reduced by 90 per cent, with a 75 per cent

reduction in the 37 plants. The EPA said it is still in cases round the world of rare direct causal connection has not where polyvinyl chloride is investigating whether it can establish but fatal form of liver cancer been established. made. Vinyl chloride is the poly similar rules to the est. in workers exposed to vinyl. The report said drinking of vinyl chloride escaping into basic gas, while polyvinyl made 8,000 plants where poly-chloride. In addition there are water supplies should be studied the air from industrial plants vinyl chloride is turned into several reports of deaths of led to see if those near vinyl and to determine whether any for a wide variety of consumer end products. persons who lived in the vinyl-chloride plants are contaminated by the products.

To date there have been 25 ty of the plants, though a di-nated.

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BFG26622

EPA Has Goal on Vinyl Gas

By Judith Randal
Star News Staff Writer

The Environmental Protection Agency has been working on an air-pollution emission standard for vinyl chloride for the past three months and hopes to complete the job within a year, EPA Administrator Russell E. Train, has announced.

Vinyl chloride in the form of a gas or pressurized liquid is used in the manufacture of the plastic polyvinyl chloride, which in turn is fabricated into products ranging from baby pants and plastic credit cards to garden hoses, sporting and auto goods and medical supplies. Its link in the past year to 25 cases among industrial workers of angiosarcoma of the liver — a rare and invariably fatal form of cancer — have made it the target of international concern.

In his announcement yesterday, Train told a press conference that the new standard, when completed, will apply under the Clean Air Act to the emissions from the nation's 52 plants which either make vinyl chloride gas or polyvinyl chloride itself.

An EPA task force which made the recommendation has determined, he said, that these plants account for more than 95 percent of vinyl chloride emissions. In so doing, he reported, they probably release more than 200 million pounds of vinyl chloride and 50 million pounds of polyvinyl chloride into the atmosphere each year.

THE TASK FORCE estimates, he reported that it will be possible to reduce vinyl chloride emissions by about 90 percent and those from polyvinyl chloride about 75 percent with a consequent increase of about 4 percent in the cost of the plastics. Indications are, he added, that existing technology can do the job and, indeed, he praised some manufacturers for voluntarily having taken steps to bring the danger under control.

There is at present, he added, no evidence that there is much leakage of vinyl chloride into water or that it is even potentially dangerous if it occurs. Nevertheless, said Train, in accordance with task force recommendations, waters downstream from vinyl chloride and polyvinyl chloride plants will be monitored.

In addition to the 52 plants which are the primary suppliers of the plastic, some 8,000 others utilize the synthetic material for the manufacture of a wide variety of products. EPA officials said yesterday that exposure from these sources is at lower levels than that of the primary plants and is therefore presumably less hazardous.

They conceded, however, that complete safety cannot be assumed and that the situation must be monitored and watched.

Besides advising EPA to devise standards for the 52 primary plants where vinyl chloride air pollution is the greatest, the task force has made 18 other recommendations designed to develop data about the apparent hazards of the plastic and reduce them where possible.

Meanwhile, as the EPA deals with the outdoor environmental problems posed by vinyl chloride, the Labor Department's Occupational Safety and Health Administration is considering standards which would better protect employees exposed within the walls of their places of work.



TO: R.B. Downey

DEPARTMENT _____ BUILDING _____

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☐ RETURN WITH MORE DETAILS	☐ ANSWER
☐ INVESTIGATE AND REPORT	☐ NOTE AND RETURN TO ME
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