

DIALOG (VERSION 2)

DIALOG File 16: PROMT - 72-85/Nov, Week 1 (Copr. Predicasts Inc. 1985)

insects in dairy barns and potato patches. Since cancer may not develop until 25-30 years after exposure to a carcinogenic agent, however, the physicians expressed concern about a series of such cases.

*1USA *United States *2879520 *Arsenic & Sulfur Insecticides *93 *occupatnl safety

376078

EPA has adopted air-emission standards for plants making vinyl chloride and two related chemicals.

Wall Street Journal 3 Star, Eastern SP edition October 22, 1976 p. 2

The agency said that the standards would require an 80% cut in air emissions of the cancer-linked chemicals. The standards would require the 58 existing makers of vinyl chloride and related compounds, ethylene dichloride and polyvinyl chloride, to install \$198 mil of pollution-control equipment.

The Society of the Plastics Industry Inc (Washington, DC) said that the new standards are strict but that the industry pledges its best efforts to comply. The plants have 90 days to meet the EPA standards, but can apply for an extension of up to 2 years. The agency said that concentrations of the chemicals in the air around the plants ranged from 1 ppm to 3 ppm in 1974-75. The new standard would reduce that by 90%, or to 0.1-0.3 ppm.

*1USA *United States *2868122 *Vinyl Chloride Monomer *93 *pollution regulatn

373763

California has added asbestos and vinyl chloride to a list of materials requiring registration for use in the workplace by Sept 1.

Chemical Engineering June 20, 1977 p. 60

Earlier in 1977, the state established a roster of 14 other cancer-causing materials, for which registration is necessary by July 1. The program will help the state locate high-exposure areas for first priority in inspections set to begin later in 1977.

*1USA *United States *2868122 *Vinyl Chloride Monomer *93 *occupatnl safety

367619

Italian scientists have found that vinylidene chloride causes kidney cancer in mice.

Wall Street Journal 3 Star, Eastern SP edition February 23, 1977 p. 18

The initial study results arouse concern that the chemical may possibly cause human cancer. Vinylidene chloride is a chemical used in combination to make many plastic wraps and plastic containers used largely in food packaging. The chemical is molecularly related to vinyl chloride, used in various household plastic products, which causes human liver cancer. The study was conducted at the U of Bologna.

*4ITA *Italy *2868123 *Vinylidene Chloride *35 *product safety

R&S 140096

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361771

NIOSH recommends that the new acrylonitrile safety standard be 5 times more stringent than the current standard.

Daily News Record October 7, 1977 p. 1,23

Acrylonitrile is used to make acrylic fiber and NIOSH feels the standard should be set at 4 parts acrylonitrile to 1 mil parts air, vs. the current 20 ppm. Acrylonitrile causes cancer and an estimated 125,000 workers in the textile, apparel and other industries, are exposed to it.

About 1.5 bil lbs/yr of acrylonitrile are produced in the US by the reaction of propylene with ammonia and oxygen in the presence of a catalyst. The major use of acrylonitrile is in the production of acrylic and modacrylic fibers by copolymerization with methyl acrylate, methyl methacrylate, vinyl acetate, vinyl chloride, or vinylidene chloride.

Chem Mkt R 10/10/77 p7

*1USA *United States *2868721 *Acrylonitrile *93 *occupatnl safety

1USA United States 2868721 Acrylonitrile 93 occupatnl safety

361746

The hazard of angiosarcoma to PVC workers might not be as great as first thought, says a report by Dr P Baxter of the Employment Medical Advisory Service, and three other medical experts.

Financial Times (London) see: FT Fft or FT London October 8, 1977 p. 12

Of 47 reported cases of cancer in UK PVC plants from 1963-73, diagnosis was confirmed in only 14. Of those, only one could be associated with workplace exposure to VCM. The overall incidence of the complaint did not appear to be linked geographically with the location of factories dealing with the chemical.

*4UK *United Kingdom *2868122 *Vinyl Chloride Monomer *93 *occupatnl safety

4UK United Kingdom 2821210 Polyvinyl Chloride 93 occupatnl safety

4UK United Kingdom 2868122 Vinyl Chloride Monomer 93 occupatnl safety

361255

OSHA will regulate cancer-causing substances in the workplace with a Emergency Temporary Standard reducing worker exposure to the lowest possible level any time a substance is found to be carcinogenic in humans or in two animal tests with mammals.

Journal of Commerce October 4, 1977 p. 7

The plan categorizes carcinogens as: 1) confirmed carcinogens, for substances with two tests showing cancer-causing properties; 2) suspected carcinogens, which are substances for which there is evidence that is suggestive or from one animal species; 3) those substances which have insufficient data to confirm a relationship to cancer; and 4) substances that could fall into other categories but are not found in US workplaces.

Substances expected to be classified in category one are: asbestos, vinyl chloride, coke oven emissions, arsenic, benzene, kepone and beryllium. OSHA expects that of the current 2,000 substances now suspected of being cancer causing, about 100 will be classified as carcinogens, 200-300 as suspected carcinogens and 1,500

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R&S 140098

will be put in category three.

Chem Week 10/12/77 p18

*1USA *United States *2800000 *Chemicals *93 *occupatnl safety

1USA United States 2800000 Chemicals 93 occupatnl safety

1USA United States 9125300 Occupational Safety & Health Adm 93 occupatnl safety

352659

California has added asbestos and vinyl chloride to a list of materials requiring registration for use in the workplace by Sept 1.

Chemical Engineering June 20, 1977 p. 60

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*1USA *United States *2868122 *Vinyl Chloride Monomer *93 *occupatnl safety

341609

Arsenic pesticides suspect in four deaths.

Chemical Marketing Reporter October 18, 1976 p. 7.35

Deaths of four individuals from the rare form of liver cancer, angiosarcoma, possibly linked to exposure years ago to arsenic-containing pesticides, are being investigated by Rep D Obey of Wisconsin. A medical account of the cancer cases was published in the Journal of the American Medical Assn. Contact with vinyl chloride gas, which earlier had been linked to angiosarcoma deaths in PVC production in the chemical industry, apparently has been ruled out in the Marshfield cases. Instead, the main factor in common of the four deaths is past experience in farming or farm labor, according to Drs JJ Fiechtner and CN Reyes. No definite exposure to arsenic-containing pesticides among these liver cancer deaths has been demonstrated yet.

*1USA *United States *2879010 *Pesticides *35 *product safety

339954

No safe dose of vinyl chloride: We have been unable to detect a safe dose of vinyl chloride, says C Maltoni, whose work at the Institute of Oncology & Tumor Ctr (Bologna, Italy) originally established the link between vinyl chloride and cancer.

Chemical Week September 15, 1976 p. 47

Maltoni's continuing work in the field shows that vinyl chloride appears to cause other tumors as well as angiosarcoma of the liver. Among them: tumors of the brain, skin, stomach and lung. But carcinogenicity is affected by several factors, such as species, strain and age of animals tested, method of administration, dose and duration and schedule of treatment. As to whether the current US limit of 1 ppm exposure is an acceptable risk, says Maltoni: 'It's a political decision

*4ITA *Italy *2868122 *Vinyl Chloride Monomer *35 *product safety

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331134

How BFG is conquering its vinyl chloride menace--BF Goodrich, which initiated a \$42 mil R&D program for 1974-77 to achieve lowest possible levels of human exposure to VCM, following reports of deaths of three workers at its Louisville, Ky, PVC plant, deaths due to angiosarcoma (a form of liver cancer), now supplies PVC resins and compounds with so little residual VCM content as to virtually eliminate possibility of VCM exposure from their processing or use.

Rubber World February 1976 p. 9-10

Compounds for food packaging are expected to meet FDA proposed standards.

*1USA *United States *2868122 *Vinyl Chloride Monomer *32 *pollutn processes;
*Goodrich (BF); Duns No: *00-466-7452; Ticker: *GR; CUSIP: *382388

330781

New regulations covering Japanese worker/exposure to VCM will cost the Japanese PVC industry over \$40 mil in equipment and monitoring.

Chemical Age now Manufacturing Chemist & Aerosol News see MfrChemAer February 20, 1976 p. 3

New regulations are the result of work of the Council of Experts on Countermeasures against Occupational Cancer, and will follow the Council's recommendations for an average concentration of less than 2 ppm and maximum standard deviations of 0.4 ppm.

Work is also going on in Japan on methods of removing the residual VCM in PVC. The PVC Assn of Japan has begun to operate a pilot plant for the removal of VCM from the effluent of PVC resins plants. The Assn developed the plant in cooperation with two engineering firms, Chiyoda Chemical Eng & Construction and Japanese Gasoline. Reports say that the plant should be efficient enough to cope with the toughest regulations. The Assn in Japan hopes to complete a commercial unit for monomer removal by March 1977.

*9JPN *Japan *2821210 *Polyvinyl Chloride *32 *pollutn processes; *Chiyoda Chemical Eng; Duns No: *69-053-6263

9JPN Japan 2821210 Polyvinyl Chloride 32 pollutn processes; Japanese Gasoline

9JPN Japan 2821210 Polyvinyl Chloride 93 pollution regulatn

330772

PVC suppliers will remain unchanged in 1976 by EPA, OSHA safety codes.

HFD-Retailing Home Furnishings December 30, 1975 p. 16

'We will have to go along with reports that the EPA standards will mean increases of 3-4% at retail,' said Ray Abramowitz of Hooker Chemical, a subsidiary of Occidental Petroleum Co.

Vinyl chloride emission levels within such plants were set several months ago by OSHA. That agency acted after Goodrich said that two of its employees exposed over long periods of time to vinyl chloride fumes had contracted a rare form of cancer. Vinyl chloride has been linked to a total of 40 cases of the cancer.

*1USA *United States *2821210 *Polyvinyl Chloride *34 *health hazards

R&S 140099

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329935

France bans plastic wine bottles--The fear that polyvinyl chloride may contain cancer-causing agents forced the decision, affecting 10 mil packaged bottles of wine--the dominant wine package on French supermarket shelves.
Beverage World January 1976 p. 13

*4FRA *France *3074313 *Plastic Beverage Bottles *94 *prod safety rules

329632

BF Goodrich states that it is virtually impossible for anyone living in the area of its VC plants to become ill from escaping gases.
Rubber & Plastics News February 23, 1976 p. 8

The vinyl chloride gas (VCM) used in making PVC has been linked to a rare form of liver cancer. Recent studies have also shown that the wives of male PVC workers suffer a higher miscarriage rate and their children have more birth defects of the central nervous system, than those of non-PVC workers. BFG said that air samples taken at the boundaries of its VC plant and five PVC facilities show vinyl chloride in the air at the rate of a few hundredths of one ppm of air. Those levels are reduced even further within a short distance because of action of air on the gas.

*1USA *United States *2868122 *Vinyl Chloride Monomer *42 *air polluting; *Goodri
(BF); Duns No: *00-466-7452; Ticker: *GR; CUSIP: *382388

329166

Will cancer link retard chemical growth? The chemical industry is battered l disclosures of carcinogenicity of some products and tainted by epidemiological dat that link cancer risk with exposure to others and threaten to stifle new produc development.
#Chemical Week February 25, 1976 p. 41

I Selikoff, director of the environmental science laboratory at Mount Sinai School of Medicine (New York), says, 'On the one hand, a chemical introduced today may not show a detectable cancer risk for 20 years or more. But it is difficult to consider that no new materials or processes be introduced into industry and agriculture until we learn how to predict whether or not they will have delayed toxicity.'

Selikoff, a physician who has been doing cancer research for almost 25 years, primarily in the area of lung cancers, has been associated with asbestosis in cases such as Reserve Mining's discharge of tailings into Lake Superior and worker exposure at United Asbestos and Rubber Co's Paterson, NJ, and Tyler, Tex, plants. But he sees the case of vinyl chloride as a success story. He says it was s success for science in having defined the problem; success for labor in the rapid mobilization of concern; success for govt in urgently collecting data, evaluating it and translating it into necessary regulations; and success for industry in preparing the necessary engineering controls to minimize or eliminate the hazard.

*1USA *United States *2800000 *Chemicals *35 *product safety

R&S 140100

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312175

Pilot plant in Japan for removing VC monomer: The PVC Assn (Japan) has begun operating a pilot plant for removing monomer from discharges of polyvinyl chloride resin manufacturing plants.

Japan Economic Journal January 13, 1976 p. 9

VC monomer is being suspected as a cause of cancer. The association developed the plant with the help of two engineering companies--Chiyoda Chemical Engineering & Construction Co and Japan Gasoline Co.

The plant, using activated carbon to adsorb VC monomer, comprises two models--one of the fixed floor type and the other of the moving floor type. The former is being tested at the Kashima plant of Kanegafuchi Chemical Industry and the latter at the Nishiki plant of Kureha Chemical Industry Co. The association wants to complete a commercial plant for monomer removal by March 1977.

*9JPN *Japan *2868122 *Vinyl Chloride Monomer *32 *pollutn processes

9JPN Japan 2868122 Vinyl Chloride Monomer 32 pollutn processes; Kanegafuchi Chemical Ind; Duns No: 69-053-5406

9JPN Japan 2868122 Vinyl Chloride Monomer 32 pollutn processes; Kureha Chemical Ind; Duns No: 69-053-6883

9JPN Japan 8911000 Engineering Services 61 contract complete; Chiyoda Chemical Eng; Duns No: 69-053-6263

9JPN Japan 8911000 Engineering Services 61 contract complete; Japan Gasoline

311297

Halocarbons study for EPA finds US F-11, F-12 emissions make up nearly half of total--The US accounts for 45% of worldwide emissions of F-11 and F-12, the two fluorocarbons that are most likely to pose a threat to earth's protective layer of stratospheric ozone, according to a report prepared by EPA. P Western European countries account for about 40%, with Eastern Europe, Japan, Canada, Australia and other countries accounting for the rest.

#Chemical Marketing Reporter December 15, 1975 p. 3,66

The report, prepared for EPA by AD Little Inc, estimates that in 1973 US emissions of the fluorocarbons F-11 and F-12 totaled 310,000 mil m tons while estimated world emissions amounted to 700,000 mil m tons.

According to the report, use of F-11 and F-12 as propellants in aerosol spray products accounts for about 70% of annual US emissions. Most of these come from hair care products, antiperspirants and deodorants. Use of the two fluorocarbons in refrigeration and air conditioning equipment accounts for approximately 20% of the emissions and the remainder is attributable to use of the chemicals as blowing agents in the manufacture of plastics foams. The report says that fluorocarbons use worldwide approximate US use patterns.

The report does not attempt to evaluate the theory that release of the fluorocarbons into the atmosphere may deplete the protective ozone layer and increase the incidence of skin cancer among humans and cause crop damage. Although F-11 and F-12 have received the greatest amount of attention with regard to ozone depletion, the report identified 13 other compounds that may be cause for concern. They are carbon tetrachloride, chloroform, methyl chloroform, ethyl chlorid methylene chloride, ethylene dichloride, methyl chloride, perchlorethylen trichlorethylene, vinyl chloride monomer, F-22, F-113 and F-114.

Article gives details.

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R&S 140102

*0 *World *2868160 *Fluorocarbons *42 *Air Pollutn
311050

BF Goodrich announces end of its PVC problems.
Rubber & Plastics News December 15, 1975 p. 1,3

BF Goodrich claims that a crash research and development program, origin budgeted at \$42 mil, has developed a new technology that should virtually elimi. any future deaths resulting from current production of PVC, the US' second most popular plastic. PVC and its precursor, vinyl chloride monomer (VCM), a gas, have been subject to intense inspection over the last few years after a rare form of liver cancer, angiosarcoma, was found in workers who had been breathing the VCM. About 40 workers in PVC polymerization plants around the world have died from the disease, according to JD Ong, presidnt of BFG.

Once VCM was identified as the cancer-causing agent, the problem became one of eliminating all human contact with the gas. BFG set its goals at completely sealing the PVC manufacturing process, eliminating any VCM residue in the finished product and ending any escape of the dangerous gas into the atmosphere. For all practical purposes, these goals have been met by BFG. Lifesaving developments, although proprietary, will be licensed to all interested PVC producers worldwide.

Worker exposure in Goodrich plants has been reduced to between an average of one and three ppm, well within limits set by OSHA. Exposure to employees, determined by personal monitoring, is lower yet. Equipment has been installed to cut leaks in the process, new ventilation systems have been put to work and employees are using comfortable air-fed respirators that virtually eliminate any exposure to the gas.

*1USA *United States *2821210 *Polyvinyl Chloride *32 *New Process; *Goodrich (BF);
Duns No: *00-466-7452; Ticker: *GR; CUSIP: *382388

310234

BF Goodrich Co has confirmed more cases of fatal liver cancer among workers exposed to vinyl chloride monomer.
#Chemical Marketing Reporter November 3, 1975 p. 5,37

Nine former workers at the BF Goodrich Canada Ltd polymerization plant (Shawinigan, Que) have died of angiosarcoma. The Shawinigan plant has produced more VCM-related liver cancer fatalities than any other vinyl chloride plant in the world. Nine cases of occupationally related angiosarcoma have also been reported at Goodrich's (Louisville, Ky) polyvinyl chloride plant, but one of the victims is still living.

The nine liver cancer deaths at the Shawinigan plant were all discovered by Dr Fernand Delorme, a pathologist at the Centre Hospitalier Regional de la Mauricie (Shawinigan Sud). Goodrich recently reported this incidence to the National Institute of Occupational Safety & Health (Washington, DC).

Goodrich was the first vinyl maker to notice a high incidence of liver cancer among workers when it uncovered a number of cases at its Louisville, Ky, plant in late 1973. Since then, the company has greatly reduced ambient air concentrations of vinyl chloride gas at the Shawinigan plant as well as at US plants. Exposure levels at Shawinigan have been reduced to 2-3 ppm over an 8-hour day. To date, NIOSH reports that 19 people have died of angiosarcoma in the US, seventeen of whom were employed at polymerization facilities.

Article gives details.

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*2CAN *Canada *2868122 *Vinyl Chloride Monomer *23 *Safety Method; *Goodrich (Bf)
Canada

309961

The FDA is currently working on a proposal to ban the use of PVC in food packaging because of the plastic's potential for causing cancer.
Chilton's Food Engineering October 1975 p. 27

The product, which is the second most used plastic in food packaging, would be banned from most of the present packaging of luncheon meats and in the use for plastic bottles for items such as salad dressing and vegetable oil. Makers of PVC would suffer a severe setback if the proposal were passed. About 150 mil lbs/yr of the plastic are used for food wraps and an additional 55 mil are used for bottles. FDA has decided for the time being, that some kinds of wraps made of PVC, such as those used for fresh meats and fruits, would be permitted. The basic distinction between films that would be permitted and those that wouldn't, is the difference between rigid and semi-rigid packages and pliable packs such as film wraps. The prohibition would apply to rigid or semi-rigid containers.

Despite the industry's claim that PVC poses no health problems, the plastic has been linked to cancer among workers exposed to it in industrial settings. Vinyl chloride has been shown in the last two years to have caused at least 19 cases of very rare and fatal cancer of the liver. Most victims were workers in plants producing vinyl chloride.

*1USA *United States *2821210 *Polyvinyl Chloride *94 *Prod Safety
1USA United States 7380000 Packaging Services 94 Prod Safety

309957

A federal health official has reported that the birth defect rate ranges up to three times greater than normal for babies born in three Ohio towns where PVC is manufactured.

Rubber & Plastics News November 3, 1975 p. 6

PVC, a widely-used plastic, has come under fire because its gaseous precursor, VCM is suspected to be a carcinogenic (cancer-causing) agent, responsible for liver cancer deaths among PVC workers.

Now, the health onus of the material has spread outside the workplace, according to Dr. Joseph Wagoner, director of field studies for the National Institute for Occupational Safety & Health (NIOSH). Wagoner told a California state Senate health committee that studies in Ashtabula, Painesville and Avon Lake (all in Ohio) show that babies born to wives of PVC workers are three times as likely to develop birth defects affecting the central nervous system. In addition, wives of the workers involved are more likely to miscarry, and the number of brain tumors developing in the towns' overall adult population is three times the normal level.

*1USA *United States *2821210 *Polyvinyl Chloride *34 *Health Hazards

R&S 140103

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308640

Substitutes for PVC were discussed at a packaging seminar, but these products may have migration problems, too.

Chemical Week October 8, 1975 p. 47

Discussed were various substitute materials such as copolyesters, acrylic-based polymers and nitrile resins. However, there was also a sobering note of caution by S Gilber of Rutgers University's Dept of Food Science (New Brunswick, NJ) that producers of these potential substitutes should not assume their materials will be free of the problems of monomer migration already charged to PVC.

Gilbert thinks that the US FDA is beginning to accept the concept of an effective zero limit, which he suggested could coexist with the Delaney Amendment barring use of food additives that cause cancer in humans or other animals. He urged industry, govt and the public to join in establishing a sound research program to determine the effective zero limit, relative to migration and toxicity, for various materials. 'Until we have this information, we'll have cases similar to PVC,' he said.

*1USA *United States *2821210 *Polyvinyl Chloride *93 *Safety Rules

307227

Polyvinyl chloride resin makers are disappointed with the FDA's proposed ban on rigid and semirigid PVC food packaging, but are confident that the evidence that new resins are clean, will clear the way for all PVC food packages.

Chemical Week September 24, 1975 p. 30

The survival of the 300 mil lbs/yr PVC food packaging business--second to polyethylene--and the 400-mil lbs/yr water pipe business, in light of the concern about vinyl chloride as a carcinogen, could depend on three technological developments.

Resin makers are perfecting stripping techniques that reduce the amount on unreacted VCM residual to 1 ppm, thereby almost eliminating the migration of monomer into foodstuffs.

Methods of measuring the amount of monomer that migrates into foodstuffs are being improved from readings of 50 ppb down to 20 ppb, and a new method could reach 2.5 ppb.

Data on the possible carcinogenicity of ingested VCM are still lacking, but a study by a Bologna, Italy, Cancer Institute researcher Cesare Maltoni, is expected soon, and could have a major impact on PVC food packaging use.

*1USA *United States *2821210 *Polyvinyl Chloride *94 *Prod Safety

1USA United States 3070001 Plastic Packaging Materials 94 Prod Safety

1USA United States 3070001 Plastic Packaging Materials 94 Prod Safety

307225

The US FDA has banned the use of PVC in some food packaging, effective in late 1975, but did not ban its use in water piping or in the kind of film that packages some fresh meats.

Business Week Industrial Edition September 15, 1975 p. 36

The FDA acted on the suspicion that PVC contains a tiny residue of the vinyl
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chloride monomer that is its raw material and is a suspected cancer-causing agent.

The Society of the Plastics Industry claims that present manufacturing methods insure that PVC is free from vinyl chloride, and it argues that the FDA should not rule against PVC packaging as though it contained a food additive. While about 100 mil lbs/yr of the 6 bil-lb PVC market would be affected by the FDA ban, the industry fears that the FDA is setting a troublesome precedent.

*1USA *United States *2821210 *Polyvinyl Chloride *94 *Prod Safety
1USA United States 3070001 Plastic Packaging Materials 94 Prod Safety
1USA United States 3070001 Plastic Packaging Materials 94 Prod Safety
1USA United States 7380000 Packaging Services 94 Prod Safety

307224

The FDA proposed to ban the use of certain food-packaging materials made of polyvinyl chloride (PVC) due to possible cancer danger.

Wall Street Journal 3 Star, Eastern SP edition August 29, 1975 p. 2

The ban, which had been expected, would include use of PVC plastics in bottles, blister packs used for sandwich meats, boxes and other semirigid and rigid packaging that come in contact with food. The proposal also would prohibit the plastics in coatings applied to citrus fruits to retain freshness. However, the regulation would continue to permit PVC plastics in pliable film-type wraps, gaskets, cap liners, tubing and package coatings that come in contact with food.

The proposal seeks to eliminate packaging from which vinyl chloride gas, which is contained in PVC plastic, has been found to migrate to foods and liquids. The migration problem hasn't been detected in using flexible and thinner PVC plastics. The plasticizing process that makes the material flexible, greatly reduces the trapped vinyl chloride gas.

*1USA *United States *2821210 *Polyvinyl Chloride *94 *Consumer Law
1USA United States 3070001 Plastic Packaging Materials 94 Consumer Law
1USA United States 3070001 Plastic Packaging Materials 94 Consumer Law

306067

PPG Industries Inc (Pittsburgh, Pa) is raising prices of its vinyl chloride monomer one cent/lb. P Vinyl chloride monomer sells on long-term contracts in the range of 10-12.5 cents/lb.

HFD-Retailing Home Furnishings June 2, 1975 p. 52

PPG attributed the increase to 'continually increasing cost pressures.' One of the upward pressures is the recent order of federal occupational health authorities for the industry to reduce worker exposure to vinyl chloride gas. Long-time exposure to the gas has been linked with a rare cancer of the liver

*1USA *United States *2868122 *Vinyl Chloride Monomer *74 *Prices; *PPG Industries

305721

FDA will propose to ban some uses of polyvinyl chloride in food packaging within the next few weeks.

Chemical & Engineering News August 18, 1975 p. 7
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The agency is concerned that vinyl chloride, which is processed into solid polyvinyl chloride for bottles and semirigid wrapping paper, could migrate into foods. Vinyl chloride is known to cause cancer in humans. Until now, FDA had intended to propose limiting vinyl chloride content in 50 ppb.

*1USA *United States *2821210 *Polyvinyl Chloride *94 *Prod Safety
1USA United States 3070001 Plastic Packaging Materials 94 Prod Safety
1USA United States 3070001 Plastic Packaging Materials 94 Prod Safety

305657

Chromate-based pigments have come under suspicion as a cause of lung cancer.
Chemical Engineering July 21, 1975 p. 51

The fear has been raised by two European studies, which prompted the Dry Color Manufacturers' Assn (DCMA) (Nutley, NJ) to alert the National Institute of Occupational Safety & Health of the danger. Though chromium has been a cancer suspect for a long time, this is the first red flag raised against chromate pigments. One of the studies is by Italy's Cesare Maltoni, famed for an earlier investigation of the carcinogenic potential of vinyl chloride monomer. His chromate work involved subcutaneous injection of pigments into rats and may not be directly related to the threat of lung cancer. But the second study, performed by Sverre Langard and Tor Norseth of the Institute of Occupational Health (Oslo, Norway), is an epidemiological one that looked into the medical histories of workers at a Norwegian chromate-pigment plant. Of 133 workers surveyed, three cases of lung cancer and one of the nasal passage were found. However, the small sample size and the smoking histories of the victims have put the results in some doubt.

DCMA, believing the European studies are inconclusive, is sponsoring two investigations of its own while urging pigment manufacturers to exercise caution, even to use respirators if necessary, in the production of chromate materials. The investigations are an epidemiological study of the 20-year medical histories of chromate-pigment plant workers, conducted by Tabershaw-Copper Associates Inc, and an animal-feeding experiment being performed by Bio-Test Laboratories Inc, to determine the bio-availability of chromate pigments. Results should be known by end-1975.

*1USA *United States *2816310 *Chrome Colors *34 *Health Hazards

304946

US Consumers are being exposed to cancer-causing vinyl chloride in a variety of plastic packaging on items ranging from lunch meat to mouthwash, a Ralph Nader research group said.

#Journal of Commerce July 2, 1975 p. 9

The health research group asked the FDA to ban all such packages, to prohibit vinyl chloride in all food products and to remove from the market any food or drug previously produced in vinyl chloride packaging. Vinyl chloride was banned as a propellant in aerosol sprays in 1974. It has been linked to at least 19 cases of liver cancer among workers in the industry in the US who were exposed to it.

*1USA *United States *3071600 *Vinyl Film *94 *Consumer Law
1USA United States 3071600 Vinyl Film 94 Consumer Law

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304662

Japanese Labor Ministry recently held a conference of experts on occupationally caused cancer, presided over by H Sakabe of the Industrial Health Institute of the Ministry, where a final review was made on the permissible VCM concentrations in the working environments of vinyl chloride factories. P The conference has decided to fix the concentration limit at 2 ppm both in terms of the discharge standard for local air exhaust as specified under the ordinance for prevention of impediments due to specified chemicals based on the Industrial Safety & Hygiene Law, and also as the aim of the Ministry's administrative guidance.

Japan Chemical Week June 19, 1975 p. 3

The standard in the US is 1 ppm.

When compared with the US standard, the Japanese concentration level criterion seems less strict, but when the difference in the method of calculating density is taken into account, the Japanese standard is of the same level as that of the US.

It is anticipated that the vinyl chloride industry will be forced to improve production facilities to a considerable extent in order to meet the new standards. The Labor Ministry plans to revise ordinances which will go into effect from October 1, 1975.

*9JPN *Japan *2868122 *Vinyl Chloride Monomer *93 *Safety Rules

304374

'The preservation of the PVC industry is not just an exercise in big business, it is the preservation of an important part of the nation's economy,' Dr WA Holmes-Walker of the British Plastics Federation told a conference on vinyl chloride and safety.

Chemical Age now Manufacturing Chemist & Aerosol News see MfrChemAer June 6, 1975 p. 8

Holmes-Walker said that from time to time during 1974, following the discovery of the link between exposure to VCM and angiosarcoma, a rare form of liver cancer, there had been suggestions that PVC should be 'banned' because it was dangerous.

'Not only are such suggestions completely irresponsible, but they also ignore the purpose of the very thorough and effective tripartite discussions between industry, government and trades unions in agreeing on safety standards which are at the same time both realistic and attainable.' Despite the widespread publicity given to the VCM health problem during 1974, Holmes-Walker said that no reduction in demand for PVC or products made from PVC as result of this had been observed in either the UK or Europe.

*4UK *United Kingdom *2821210 *Polyvinyl Chloride *60 *Market Data

304300

Customers of DuPont's Pigments Dept have received a memorandum from the firm stating that DuPont workers exposed to zinc yellow, chrome yellow and molbydate orange are the subject of an epidemiological study to determine if they are unusually subject to lung cancer. P In its memorandum the company cited a warning put out by Dry Color Manufacturers' Assn that lead and zinc chromates were implicated in the disease as a result of research on rats done by Dr C Maltoni, the Italian researcher who broke much of the ground in the vinyl chloride case. P Six

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US producers of lead chromate, together with representatives of Canadian, European and Japanese manufacturers and the Intl Lead Zinc Research Organization are funding research through the color makers association to determine more fully the potential toxicity of the compounds.

Chemical Marketing Reporter July 7, 1975 p. 7,18

*1USA *United States *2816310 *Chrome Colors *34 *Health Hazards; *DuPont; Duns No:
*00-131-5704; Ticker: *DD; CUSIP: *263534

303364

A New York Academy of Sciences Conference on Occupational Carcinogenesis has revealed new data tending to link vinyl chloride exposure and cancer, but also showed that the evidence is far from complete.

Plastics Technology Magazine April 1975 p. 21

Dr C Maltoni, whose inhalation studies in Italy have produced angiosarcoma in animals exposed to as low as 50 ppm of VCM, said that these studies are 'highly predictive' of results from epidemiological studies of humans exposed to VCM. Maltoni also reported on what are reportedly the first feeding studies with VCM, in which angiosarcomas developed in rats fed 16.6 and 50 mg of VCM/kg of body weight for 50 weeks, though no cancer appeared after feeding 3.3 mg/kg. Cancer at the higher ingestion levels was no surprise and not relevant to human exposures. Lower-level feeding studies are continuing.

A second new study was presented by Dr PF Infante of the Ohio Dept of Health examining health risks to populations living near PVC polymerization plants. The results of the findings suggest that mothers living in communities with PVC manufacturing facilities gave birth to an excess number of children with congenital malformations, compared with the expected based on the state average or based on the experience in the balance of the counties in which these cities are located. Furthermore, there appeared to be a higher than average number of central nervous system defects among births in these cities, as well as excess adult deaths from tumors of the central nervous system.

*1USA *United States *2868122 *Vinyl Chloride Monomer *34 *Health Hazards

301772

Two actions by the US Supreme Court gave rise to indications that the court may intend to take a hard-nosed attitude on environmental questions where dangers to the health of individuals has been proven, while being somewhat more lenient where this question may still be a subject of debate in the scientific community. The court refused to set aside the strict new vinyl chloride worker safety standards that have been imposed by Occupational Safety & Health Admin while the standards are being challenged in the lower court.

Chemical Marketing Reporter April 7, 1975 p. 7,32

The court also refused to set a timetable for Reserve Mining Co to discontinue the dumping of taconite waste from its Silver Bay, Minn, processing plant, said to contain asbestos fiber that could cause cancer, into Lake Superior from which Duluth and several other communities obtain their water supplies.

(cont. next page)

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*1USA *United States *2800000 *Chemicals *94 *Consumer Law
1USA United States 2868122 Vinyl Chloride Monomer 94 Consumer Law

301749

Vinyl chloride is not a rare isolated incident of a chemical causing cancer among the workers exposed to it.

Chemical & Engineering News April 7, 1975 p. 16

Paper after paper presented at a New York Academy of Sciences Conference on Occupational Carcinogenesis in March 1975 related worker exposure to a particular substance to an increased incidence of various types of cancer. Examples cited included development of respiratory cancers among hard rock miners exposed to an asbestos like material, a high incidence of cancer among personnel who administer anesthesia and a high incidence of birth defects among their children, lung cancer among benzoyl chloride and coke oven workers, skin cancers among workers exposed to cutting oil mists, and leukemia among workers exposed to benzene.

World Health Organization recently estimated that 80-90% of all human cancers are environmentally related or triggered. Most of the known chemical carcinogens are the product of increasing agricultural and technological sophistication, such as the introduction of new chemicals for use in pesticides and plastics. Fairchild estimates the cost of these environmentally induced cancers at about \$35 bil. So far government action in dealing with chemical carcinogens has been mainly reactive and fragmented.

Despite the problems involved, government agencies are working toward coordinating their efforts and developing a systematic approach to chemical carcinogens. For example, NIOSH has decided on its policy for dealing with chemical carcinogens.

*1USA *United States *2800000 *Chemicals *34 *Health Hazards

290391

Levels of vinyl chloride monomer used in studies that indicated ingestion could cause cancer were much too high, according to Cesar Maltoni, who performed the tests on rats at the Institute of Oncology (Bologna, Italy).

Chemical Week April 2, 1975 p. 36

Maltoni has now begun new studies of VCM ingestion at much lower rates: 1, 0.3 and 0.03 mg/kg of the animal's body weight. (Correction: original ingestion studies, in CW Technology Newsletter on March 19, 1975, were incorrectly reported as ppm. The figures should have read 50, 16.65 and 3.3 mg/kg of body weight).

*4ITA *Italy *2868122 *Vinyl Chloride Monomer *34 *Health Hazards

290389

Can VCM washed from PVC packaging cause cancer when ingested? Cesare Maltoni of the Institute of Oncology (Bologna, Italy) told the Royal Academy of Science in Stockholm that his experimentation with rats had, for the first time, shown that thymus and liver cancers could occur from intake of the monomer in a food.

Chemical Week March 19, 1975 p. 36

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Maltoni's earlier inhalation studies were influential in development of the new vinyl chloride occupational exposure standard of 1 ppm. In the latest study, sponsored by ICI, Montedison, Solvay and Rhone-Progil, Maltoni fed three groups (each with 80 rats) olive oil with vinyl chloride five times a week through a stomach tube. One group was fed 50 ppm VCM; the second, 16.65 ppm; the third, 3.3 ppm. After 52 weeks--half the normal rat life--one rat in the first group died of a thymus cancer and one in the second group died of liver cancer. Maltoni notes that the research is not yet completed, but suggests that the results so far are a warning.

Ralph Harding, head of the Society of the Plastics Industry, claims that the dosages are extremely high, equivalent to the amount a French consumer might ingest by drinking 20,000 liters/d of wine. Meanwhile, FDA, which has suggested a 50-ppb limit on vinyl chloride migration on foodstuffs, has not had a chance to study the new data.

*O *World *2868122 *Vinyl Chloride Monomer *45 *Perform of R&D
O World 2868122 Vinyl Chloride Monomer 45 Perform of R&D
O World 2868122 Vinyl Chloride Monomer 45 Perform of R&D

289964

Two developments in early 1975 have focused new interest on cancer hazards in the workplace.

Industry Week (formerly Steel Magazine) April 7, 1975 p. 21-23

First, the US Supreme Court failed to delay an April 1, 1975, effective date for strict new standards on worker exposure to vinyl chloride monomer, which has been linked to cancer. Secondly, a late March 1975 meeting on occupational carcinogenesis, sponsored by the New York Academy of Sciences, outlined what may be the beginning of a long drawn out battle over cancer hazards. It's thought that 85% of all cancers are environmentally caused. By the end of the meeting, cancer had been tentatively linked to workers in many industries. The scientists discussed evidence that: 1) in the rubber industry, carbon black has been detected as a possible carcinogen; 2) an elevated incidence of cancer was found in copper mining and copper smelting; 3) those workers handling an extra fine type of fiberglass may be in danger of contracting upper respiratory cancer; mortality patterns noted among workers in certain parts of the wood products industry and in carpenters suggest that these work environments contain carcinogens; and 4) the mortality patterns of metal workers suggest that respiratory cancer may be induced in human by inhalation of metals and metallic compounds.

*1USA *United States *2800000 *Chemicals *93 *Safety Rules
1USA United States 8000200 Medical Research 93 Safety Rules

289045

The US Supreme Court has been asked to decide whether one segment of the plastic industry is being hit with unreasonable health guidelines designed to protect its workers.

#Industry Week (formerly Steel Magazine) March 3, 1975 p. 10-14

The case involves polyvinyl chloride (PVC) and its raw material, vinyl chloride monomer (VCM). The latter has been linked to cancer, and stringent limits on the
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amounts allowed in a plant's atmosphere have been set by the OSHA.

Soon after OSHA issued its standard for limits on VCM, the Society of the Plastics Industry Inc (SPI) and nine PVC or VCM makers petitioned the second circuit US Court of Appeals (New York, NY) to stay the OSHA standards. On January 31, 1975, they found that they had lost that decision. Now SPI and the resinmakers have decided to take their case to the US Supreme Court. Chances are only 50:50 that the Supreme Court will hear the case. Based on the arguments made in the appeals court, however, the industry may fare no better there.

Article examines the controversy in greater detail.

The Supreme Court has refused to review the appeal (Chem Age)

Eur Chem N 3/21/75 p23; Daily News 3/24/75 p1

Chem Eng 3/17/75 p23

Chem Age 4/11/75 p6; Rubber Age 4/75 p6

*1USA *United States *2868122 *Vinyl Chloride Monomer *93 *Safety Rules

287795

Since BF Goodrich Co informed the National Institute of Occupational Safety & Health of the cancer deaths of three employees of the company's PVC plant in Louisville, Ky, on January 22, 1974, a total of thirty-five additional cases of the cancer among vinyl chloride workers has been uncovered worldwide, including at least twenty-three deaths.

Chemical Marketing Reporter February 3, 1975 p. 12

Six of the reported victims of the cancer (angiosarcoma of the liver) worked in nonpolymerization facilities, including five processing plants and one in a monomer plant. Of the total number of victims, thirty-eight, information on eight (all outside the US) is preliminary; only four (three out of seventeen in the US, and one out of five in West Germany) are known to be alive.

This is some of the information included in a report released by the Office of Occupational Health Surveillance & Biometrics of NIOSH. Summarizing the results to date of worldwide epidemiological investigations of PVC workers, Dr William Lloyd, director of the office, said: 'While an exact estimate of the incidence of liver angiosarcoma among polymerization workers cannot be determined until exposed-to-risk figures become available, it is already apparent that these workers are at very high risk of this disease.'

*0 *World *2868122 *Vinyl Chloride Monomer *35 *Product Safety

286811

In spite of some current problems the future for plastics in automobiles is still bright, according to RL Terrell, General Motors Corp vice chairman.

Chilton's Automotive Industries December 1, 1974 p. 17

Despite some flattening of the rate of increase, GM still sees some projectio as high as 400 lbs/car of plastics as early as 1980, and other ranging from 300-6 lbs/car by 1985.

GM cars in FY 1975 contain an average of 175 lbs of plastics, up 15 lbs from t average 1974 model cars. Terrell said that in addition to GM's movement towa production of the 'friendly fender,' the firm will also explore the potential fiber-reinforced plastics for structural parts in vehicles. However, Terrel

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pointed out that there are some clouds on the horizon, and spoke ominously of the future of vinyl chloride, which is reported to cause cancer of the liver under certain circumstances.

*1USA *United States *3075210 *Plastic Motor Vehicle Parts *69 *Matrl Dist
1USA United States 3712000 Automobiles 46 Materials Use

284399

BF Goodrich Co (Akron, Ohio) will spend \$42 mil over the next three to four year to reduce worker exposure to vinyl chloride to the lowest level attainable in its six plants that make or process the chemical.

Wall Street Journal 3 Star, Eastern SP edition November 5, 1974 p. 11

The company said that the expenditure was tied directly to reducing levels of the gas, which has been linked with a rare liver cancer that has killed 16 US vinyl chloride workers, six of them at Goodrich plants, but doesn't include plant expansion or facilities that would be built anyway.

Goodrich said, however, that despite the \$42 mil expenditure, it won't be able to meet federal standards for vinyl chloride exposure, scheduled for mandatory implementation in 1975, without the use of respirators by some employees. The new standards require that vinyl chloride levels in the air be held to one part vinyl chloride to every million parts of air, averaged over an eight hour period. Levels of vinyl chloride may exceed one part/million for short periods but must average no more than five parts/million for any 15-minute period in an eight-hour span.

*1USA *United States *2868122 *Vinyl Chloride Monomer *93 *Safety Rules; *Goodrich (BF); Duns No: *00-466-7452; Ticker: *GR; CUSIP: *382388

283269

The US Labor Dept has announced permanent work standards for cancer-linked vinyl chloride.

Business Week Industrial Edition October 5, 1974 p. 34

Until January 1, 1975, the present OSHA standard of 50 ppm concentration in the air will continue. During the following 12 months, permissible vapor levels will be 1 ppm averaged over eight hours, or 5 ppm in any period up to 15 minutes. Where meeting the standard is technically impossible, workers must wear respirators if the vapor content is more than 25 ppm. After January 1, 1976, respirators will be mandatory in any plant not meeting the 1 ppm or 5 ppm standards. Meanwhile, industry took immediate legal steps to challenge the standards.

*1USA *United States *2868122 *Vinyl Chloride Monomer *93 *Safety Rules

283268

Vinyl chloride risks were known by many before the cancer death reports broke out in 1973.

#Wall Street Journal 3 Star, Eastern SP edition October 2, 1974 p. 1,22

Hindsight has shown weaknesses in vinyl chloride producing firms systems aimed at protecting workers. Article gives details; it is the first of two stories
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concerning implication of the discovery that vinyl chloride can cause cancer.

*1USA *United States *2868122 *Vinyl Chloride Monomer *59 *Illness

282023

Final regulations that sharply reduce worker exposure to vinyl chloride have been issued by the Occupational Safety and Health Administration, four days before an emergency standard was due to run out.

Chemical & Engineering News October 7, 1974 p. 5

The new regulations apparently don't really please anybody. Labor has given them a lukewarm reception. And industry, which thinks they are far too strict, has immediately challenged them in the courts. Vinyl chloride has been linked to several liver cancer deaths among production workers.

The present level of 50 ppm will continue until December 31, 1974. On January 1, 1975, vinyl chloride in work-place air must be reduced to 1 ppm averaged over an eight-hour period. Workers may be exposed to no more than 5 ppm averaged over an eight-hour period no longer than 15 minutes. If these levels can't be met, employees must be provided with respiratory equipment that can reduce the vinyl chloride concentration to 1 ppm.

Ralph I. Harding, president of the Society of the Plastics Industry, claims that 'not one shred of evidence was presented at the public hearings or since that could have led OSHA to the conclusion that a lower level was necessary or achievable at this time.' Firestone has filed a suit and joined another suit filed by SPI asking for prompt and complete review of the standard.

R&P News 10/7/74 1.5; Chem Eng 10/14/74 p52

Jrnl Comm 10/3/74 p3; Chem Mkt R 10/7/74 p3,22

*1USA *United States *2868122 *Vinyl Chloride Monomer *93 *Safety Rules

281775

Many of the chemicals used to make plastics are so toxic that they affect workers' health.

Science News September 7, 1974 p. 154-55+

Earlier in 1974, 15 vinyl chloride workers died from a rare, chemically induced liver cancer. It now appears that not just vinyl chloride, but a host of plastics components are toxic, even in tiny concentrations; and the workers are alarmed. The chemical industry, scientists and the government are working toward a solution, but the problem is too complicated and far-reaching for quick answers. Rudy Jaeger and coworkers at the Harvard School of Public Health studied the specific modes of action of several toxic substances. One, 2-Chloro-1,3-butadiene, used to make neoprene (synthetic rubber), causes liver damage and hair loss. Sandor Szabo from the Harvard Medical School has shown that acrylonitrile, used in the production of acrylon, produces bleeding and tissue damage to the adrenal cortex in rats. A related compound, propionitrile, produces duodenal ulcer. By studying a group of such related compounds, he has been able to determine that the ulcerogenic activity of a toxic substance is 'mostly but not exclusively' related to a two-carbon group bearing a reactive radical such as cyanide, nitrile, or sulfhydryl. This information should help industry predict and regulate potentially dangerous substances.

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Data on the lung carcinogenesis of chloromethyl-methyl ether (CMME) has been obtained by RE Albert and coworkers at the New York University Medical Center and BG Ferris at the Harvard School of Public Health. CMME is used as a cross-linking agent for polymer resins, and is laced with bis-chloromethyl ether, a proven lung carcinogen in animals.

Although exposure standards are set for many of these toxic substances, why have workers been exposed to chemicals whose toxic and carcinogenic effects are not completely known?

*1USA *United States *2821000 *Plastic Materials *94 *Prod Safety

280820

Akzo Zout Chemie has been granted permission by the Burgemeester van Wethouders of Rotterdam to increase the capacity of its vinyl chloride plant at Botlek from 350,000 to 500,000 m tpy.

European Chemical News August 23, 1974 p. 26

The approval, however, comes with one proviso attached: that there should be no increase in chlorine movements and that steps should be taken to reduce transportation. This in effect means that Akzo can expand the plant if it brings in ethylene dichloride. Despite overcoming the major problem associated with new investment in the Netherlands--gaining local government approval--Akzo itself has not yet made its final decision on the expansion project. Akzo expects to make its final choice on a vinyl chloride expansion in a few months but, like many other VCM producers, must be tempted to postpone its decision until the full impact of the VCM cancer scare becomes clearer.

*4NET *Netherlands *2868122 *Vinyl Chloride Monomer *44 *Expansion; *Akzo Zout Chemie

280551

The vinyl chloride and cancer scare is now having a definite effect on PVC production in the UK.

European Chemical News August 16, 1974 p. 8

ICI has contacted its customers and warned them to expect lengthy allocations while work is carried out to bring the company's Hillhouse and Runcorn plants into line with expected VCM exposure level legislation.

Imports now account for around 25% of a UK market expected to show zero growth in 1974. Market observers say that this extremely high level of imports is making sectoral PVC demand almost impossible to assess. Spot PVC supplies are still entering the UK at prices of around

400/m ton, although reduced demand has buyers refusing tonnages still priced at previous

6-700/m ton peaks.

Average UK contract prices are still well below those on the Continent. UK suspension grade material is tagged at around

185-200/m ton, against French prices at the equivalent of

275/m ton and West German prices at close to

255/m ton.

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