

DIALOG (VERSION 2)

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

593592

The controversy surrounding petrochemical workers and a suspected high incidence of brain tumors was discussed at a New York Academy of Sciences meeting, held at the request of OSHA, NIH and other federal and medical institutions.

Chemical & Engineering News November 3, 1980 p. 6

Union Carbide's Texas City plant is one under investigation. So far, 18 brain cancer deaths have occurred there since 1956. A preliminary estimate points to a plantwide excess brain cancer risk 2X that normally expected among 6,800 white males at the plant since 1941. A similar rate has been ascribed to workers at other Texas facilities. However, a group of Dow epidemiologists claim that their calculations suggest no excessive risk. Another problem is that brain tumors are rare, and their cause is not site specific; what is causing the tumors at the plants will be difficult to identify. Although several chemicals are under investigation, including proven carcinogens vinyl chloride, benzene and diethyl sulfate, 'none can be linked definitely to people who had brain tumors,' according to A Robbins of NIOSH. Other petrochemical plants with similar operations have experienced no unusual incidence of brain tumors among employees. Also, some employees of the Texas plants who died of brain tumors worked only for short periods at the plants, or did not work with any of the suspected carcinogens. The Academy of Sciences meeting was an attempt to pool resources and examine all available clues from various sources. As I Selikoff of Mount Sinai School of Medicine puts it, 'NIOSH and OSHA have defined a cluster (of brain cancer incidences) in a very important US industry. Public health problems have to take precedence.'

#C&E News 11/10/80 p33-36

*1USA *United States *2860100 *Petrochemicals *93 *occupatnl safety
1USA United States 2860100 Petrochemicals 93 occupatnl safety
1USA United States 2860100 Petrochemicals 93 occupatnl safety; Union Carbide; Duns
No: 00-128-9008; Ticker: UK; CUSIP: 905581
1USA United States 2860100 Petrochemicals 93 occupatnl safety; Union Carbide; Duns
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1USA United States 2860100 Petrochemicals 93 occupatnl safety
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1USA United States 2860100 Petrochemicals 93 occupatnl safety; Union Carbide; Duns
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1USA United States 2860100 Petrochemicals 93 occupatnl safety; Union Carbide; Duns
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1USA United States 9125300 Occupational Safety & Health Adm 93 occupatnl safety
1USA United States 9125300 Occupational Safety & Health Adm 93 occupatnl safety

449840

National Cancer Inst's testing of ethylene dihalides is questioned by chemical firms.

Chemical & Engineering News November 20, 1978 p. 7

NCI has concluded that both ethylene dibromide and ethylene dichloride ingested by rats showed strong carcinogenesis. Hazleton Labs America (Vienna, Va) did both sets of tests with the chemicals fed through tubes into the animals' stomachs. Industry maintains that proper test procedure would be inhalation tests, since this would be the mechanism of human exposure. Ethylene dichloride is the precursor for PVC. Ethylene dibromide, though not as important, has a volume of \$80 mil (244 mil

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lbs in 1977), according to ITC. Demand for ethylene dibromide is dropping, since 90% of the market is tied to lead additives in gasoline, which are declining. Dow Chemical, one of 4 US producers, (Dow, Ethyl Corp, Great Lakes Chemical and PPG Industries) says there is no increased incidence of cancer among workers at its 2 ethylene dibromide plants over the incidence in the general population.

*1USA *United States *2868100 *Halogenated Hydrocarbons *94 *prod safety rules;
*Dow Chemical; Duns No: *00-138-1581; Ticker: *DOW; CUSIP: *260543
1USA United States 2868100 Halogenated Hydrocarbons 94 prod safety rules; Dow
Chemical; Duns No: 00-138-1581; Ticker: DOW; CUSIP: 260543

435215

Vinylidene chloride capacity will grow 5-7%/yr to 200 mil lbs by 1981, according to a PPG Industries' Chemical Div-US.

Chemical Marketing Reporter August 28, 1978 p. 14

PPG has a 50 mil lb expansion underway at its solid VDCM production facility at Lake Charles, La. Completion: summer 1978. On stream: first-quarter 1979.

Vinylidene chloride's major end-uses are in the production of polyvinylidene chloride copolymers, which are used in food packaging and as a barrier coating for paper and paperboard. The most popular of the polyvinylidene copolymers is polyvinylidene chloride/vinyl chloride, which is marketed by Dow as 'Saran Wrap.' A strong market is forecast for the material in food packaging, although vinylidene chloride may cause cancer at high levels of exposure. It is believed that only minute quantities of VDCM migrate from the plastic wrap when in contact with food, and these levels are greatly below those shown to induce cancer.

*1USA *United States *2868123 *Vinylidene Chloride *44 *new capacity; *PPG
Industries

380689

Vinylidene chloride, a plastics monomer widely used in food wraps, has been linked to formation of kidney cancers in mice.

Chemical & Engineering News February 28, 1977 p. 6,7

Dr C Maltoni of the U of Bologna (Italy) told a scientific workshop in New York City of inhalation studies in his lab where 20 to 25% of 120 male Swiss mice exposed to 25 ppm vinylidene chloride in air developed kidney carcinomas. These represent the first clear data linking exposure to the chemical with cancer, says Dr CE Hammond, VP for epidemiological research at the American Cancer Society.

Vinylidene chloride, or 1,1-dichloroethylene, is structurally similar to vinyl chloride and trichloroethylene, both known carcinogens. For this reason, Maltoni has been conducting 2-yr inhalation studies of the compound in rats, mice, and hamsters. The Manufacturing Chemists Assn also has sponsored inhalation and ingestion studies of the compound in rats and hamsters. The MCA studies, conducted since 1974 by Dow Chemical, have not shown any incidence of carcinogenicity, according to Dow, nor have any of Maltoni's studies on any animal other than the Swiss mouse. However, the FDA is required under the Delaney clause to ban from food contact uses a substance that is a carcinogen in any animal. Vinylidene chloride is used in copolymer vinyl chloride and with acrylonitrile, both called saran. Dow estimates that US saran production is 150 mil lb/yr, the majority of which is used

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in food wraps, including Dow's consumer product Saran Wrap. Both Dow and PPG (the only US producers) have studied the health of their workers exposed to vinylidene chloride, PPG for 7 yrs, and Dow for over 20 yrs. Although the studies are limited in size, neither shows any adverse health effects attributable to exposure to the chemical.

Chem Age 2/25/77 p7

*1USA *United States *2868123 *Vinylidene Chloride *94 *prod safety rules
1USA United States 3074910 Plastic Food Film Pkg 94 prod safety rules
1USA United States 3074910 Plastic Food Film Pkg 94 prod safety rules

339950

A carcinogen threshold limit: Conference on Origins of Human Cancer at the Cold Spring Harbor, NY, lab of JD Watson.

Chemical Week September 22, 1976 p. 29

Dow's toxicology research lab director P Gehring is trying to develop a threshold limit concept for known carcinogens, using dose-response changes for animal testing of VCM and 1,4-dioxane. Using Dow test results, Gehring concludes that exposure to 50 ppm. VCM four hpd is in the threshold transition zone for tumor induction. Also, there is a threshold of exposure in rats where the ability to replace sulfhydryl groups is not overwhelmed.

Umberto Saffiotti of the National Cancer Institute described attempts to test and regulate chemical carcinogens. Saffiotti proposed that research should take into account multiple-source exposure. According to Saffiotti, no data allows us to establish a threshold for carcinogens.

*1USA *United States *2868122 *Vinyl Chloride Monomer *34 *health hazards
1USA United States 8000200 Medical Research 39 research nec

288747

Arsenic standards are ridiculous, according to Kenneth Nelson, Asarco VP for environmental affairs.

Chemical Week March 5, 1975 p. 39

The standard 0.004 mg/cu meter exposure standard proposed by the OSHA standard is 650 times tighter than that for vinyl chloride simply because arsenic is easier to measure, says Nelson. The paradox in the arsenic-cancer-link controversy is the number of epidemiological studies showing no difference in life expectancy among workers exposed to the substance, while higher-than-normal lung cancer rates were shown by Dow and Allied studies.

*1USA *United States *2819903 *Arsenic & Compounds *93 *Pollution Reg

284404

Evidence from Italy suggests that vinylidene chloride may cause liver cancer, as well as its stable mate, vinyl chloride.

European Chemical News November 1, 1974 p. 36

An experiment by Dr Luigi Viola in Italy, who supervised laboratory studies which
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led to the US vinyl chloride restrictions, has shown that rats began to develop liver cancers after exposures to vinylidene. Although this is not definitive evidence against vinylidene chloride, it strongly suggests that the combination of the presence of chlorine and an unsaturated residue in a molecule results in cancer-forming properties. Such properties have not so far been discovered for molecules which contain an unsaturated group only, although these must now be suspect.

Dow Chemical produces vinylidene chloride at two plants in the US and at Terneuzen, the Netherlands. Dow copolymerizes vinylidene chloride with vinyl chloride or acrylonitrile to produce its Saran range of plastic wrapping materials. Both Dow and PPG Industries market vinylidene chloride in the US. ICI, which also produces vinylidene chloride and its polymers, has just prepared an information sheet for its customers on the new problem.

*4ITA *Italy *2868123 *Vinylidene Chloride *34 *Product Specs

1USA United States 2868123 Vinylidene Chloride 34 Product Specs; Dow Chemical; Duns No: 00-138-1581; Ticker: DOW; CUSIP: 260543

1USA United States 2868123 Vinylidene Chloride 34 Product Specs; PPG Industries

4NET Netherlands 2868123 Vinylidene Chloride 34 Product Specs; Dow Chemical; Duns No: 00-138-1581; Ticker: DOW; CUSIP: 260543

4UK United Kingdom 2868123 Vinylidene Chloride 34 Product Specs; Imperial Chemical Industries; Duns No: 21-015-2237; Ticker: ICHE; CUSIP: 452704

284403

The US Labor Department is investigating the possibility that vinylidene chloride may, like vinyl chloride monomer, produce cancer in workers exposed to it.

Chemical Age now Manufacturing Chemist & Aerosol News see MfrChemAer November 1, 1974 p. 6

The Labor Department has been advised by two vinylidene manufacturers, Dow Chemical Co and PPG Industries, that they had concluded that this material too was likely to cause cancer in animals. The number of workers involved is much fewer than with VCM, and few of these work outside VCM and PVC plants already covered by the OSHA regulations announced in October 1974. Also, the chemical itself may be less of a threat because it is less gaseous than VCM at room temperatures.

*1USA *United States *2868123 *Vinylidene Chloride *93 *Safety Rules

283279

Vinylidene chloride, a monomer which can be polymerized with vinyl chloride or acrylonitrile to form various kinds of saran for plastic wrap materials, surface as a possible cancer-causing agent.

Chemical Marketing Reporter October 14, 1974 p. 3,23

To date, evidence of vinylidene chloride's carcinogenic potential is confined to an experiment that showed liver cancers developing in rats after exposures of 200 parts per million of the product. Dow and government authorities stress that the evidence about vinylidene chloride is thus far meager. There have been no reported cases linking vinylidene chloride to cancer in man.

*1USA *United States *2868123 *Vinylidene Chloride *59 *Illness

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1264218

EPA gives notice on methylene chloride.
Chemical Week October 16, 1985 p. 108

Environmental Protection Agency has issued an advanced notice of proposed rule making under Toxic Substance Control Act to determine whether methylene chloride causes cancer. Environmental Protection Agency plans to list cadmium and ethylene dichloride as hazardous air pollutants under the Clean Air Act, possibly leading to emission standards in 2 years. The US produced 6 million metric tons of ethylene dichloride in 1984, primarily for use in vinyl chloride and tetraethyl lead.

*1USA *United States *2868113 *Methylene Chloride *93 *regulation

1184085

Measuring the risk of a key plasticizer.
Chemical Week May 8, 1985 p. 15,18

A study conducted for CMA has found the plasticizer di(2-ethylhexyl) phthalate (DEHP) to be a weak carcinogen. Since DEHP is not toxic to DNA, it should be classified as a nongenotoxic carcinogen, like DDT, saccharin and possibly carbon tetrachloride. It produces cancer in rodents by changing the key enzyme catalase, causing small organelles called peroxisomes to proliferate. PVC producers used 1.2 billion pound per year of plasticizer as of 1980, with DEHP accounting for 30 percent or 356 million pound/yr. Since DEHP is not chemically bound within the PVC, there is a possibility of widespread human exposure due to migration. Article discusses other studies of DEHP.

*1USA *United States *2869353 *Diethylhexyl Phthalate *35 *product standards

1165471

Very high levels of toxic material are found in air.
New York Times (National edition) March 26, 1985 p. 1,39

Hazardous materials at far higher levels and in more locations than suspected have been discovered in the nation's air, according to a Congressional survey of 80 large chemical firms. There are no uniform standards to control emissions of most of these substances, and some of the materials are subject to no regulations, with thousands of tons of cancer-causing agents and other hazardous materials released into the atmosphere from hundreds of factories. The report was commissioned by Representative HA Waxman (D-CA), who wants to develop national standards to control toxic materials. Regulators say there has been no national inventory taken of toxic chemicals emitted into the air.

Environmental Protection Agency surveyed Kanawha County, West Virginia, in 2/85, and found a spectrum of toxic substances in the air. Detailed questionnaires were sent in 1/85 to 80 large chemical companies asking them to list the amounts of proven and suspected carcinogens and other hazardous materials being released into the air. Some 67 companies responded. Meanwhile, CMA says it will provide data sheets on toxic substances to help develop coordinated emergency plans to deal with accidents near chemical plants. Environmental Protection Agency has national airborne standards for only 5 toxic pollutants: asbestos, benzene, vinyl chloride, mercury and beryllium. Other states or localities may regulate other substances.

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The varying standards cause complications for chemical firms. The highest concentrations of toxic chemicals in the air occur in W Virginia, Texas and Louisiana. The surveys specifically asked about some categories of chemicals that are considered carcinogenic, or hazardous for some other reason. Chemicals surveyed include methylene chloride, chloroform, chlorine, acrylonitrile, carbon tetrachloride, ethylene oxide, trichloroethylene, benzene, vinyl chloride, hydroge chloride and xylene.

*1USA *United States *4954000 *Air Pollution Control *93 *regulation

1165448

EPA would allow vinyl chloride emissions.

New York Times (National edition) March 29, 1985 p. 11

The Environmental Protection Agency has proposed changing its rules to allow so controlled air emissions of vinyl chloride, a cancer-causing substance. Under present rules, vinyl chloride discharges into the air are prohibited except in emergencies that are not preventable by the producing plant. If emissions can be prevented, they are not considered emergencies and are subject to penalties. Environmental Protection Agency has proposed that instead of prohibiting all but emergency releases, plants producing vinyl chloride be permitted a certain number of discharges of the substance each year, ranging from 4-7, and depending on the size and plant location. The rule changes would set no limit on the amount of the individual discharges. Critics contend the changes would allow more vinyl chloride air pollution and raise the threat of cancer to people in the vicinity of plants. Vinyl chloride, used in the production of plastics and other materials, has been found to cause brain and liver cancer in humans and is currently 1 of 5 toxic air pollutants regulated by Environmental Protection Agency.

*1USA *United States *2868122 *Vinyl Chloride Monomer *93 *regulation

1080377

Toray's new biotube improves success rate in cancer surgery.

Japan Economic Journal September 18, 1984 p. 16

Toray Industries (Japan) has developed a blood bypass tube that increases the success rate of pancreatic cancer surgery to 80%, vs the previous 20-30%. The tube has a PVC base and is coated with antithrombi material, to which heparin is chemically bonded. The heparin gradually dissolves during surgery to prevent clotting and the formation of thrombi. Toray developed the biotube jointly with Nagoya U, and will begin sales in 9/84 through its Toray Medical subsidiary.

*9JPN *Japan *3842100 *Surgical Appliances & Supplies *33 *products; *Toray Industries

1069357

DEHP found safe for child-product use.

Chemical & Engineering News August 20, 1984 p. 23

A study commissioned by CMA has found the PVC plasticizer di-2-ethylhexyl
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phthalate (DEHP) safe for use in toys and other child products. Former FDA deputy associate commissioner JV Rodricks conducted the study, and found no substantial evidence of significant cancer risk from current levels of DEHP use and likely levels of childhood exposure. The plasticizer is used in squeeze toys, teething rings, pacifiers and vinyl plastics for infant furniture. A previous study by the Natl Toxicology Program suggested that high doses of DEHP caused liver tumors in rats and mice. Studies sponsored by CMA showed that mice and rats metabolize the plasticizer differently than humans.

*1USA *United States *2869353 *Diethylhexyl Phthalate *35 *product standards

1067951

A CMA study finds DEHP safe for children's products.
Chemical Week August 22, 1984 p. 72

A new study shows that di(2-ethylhexyl) phthalate is safe for use in toys and other children's products. DEHP is used as a plasticizer in PVC products, such as squeeze toys, teething rings and pacifiers, and vinyl plastics for childrer furniture. Based on the highest estimates of risk exposure, the lifetime risk cancer is under 1 in 1 mil. The study was commissioned by CMA.

*1USA *United States *2869353 *Diethylhexyl Phthalate *35 *product standards

1055438

FOOD INDUSTRY FOCUS: Washington is cooking up new regulations.
CPI Purchasing (formerly Chemical Purchasing) May 1984 p. 54-57

Full health assessments have been performed on just 5% of the 8,600 food additives, and no toxicity data exists for 46% of those chemicals, according to the Natl Academy of Sciences. As a result, the FDA appears to be getting tougher with food additives. The FDA is near to completing safety evaluations on the 163 food color additives provisionally approved in 1960. The FDA will rule on 8 of the remaining 12 dyes, and all should be approved except Red No 3, which is used in cherries. Blue No 2, an ingredient in candies, cakes, pet foods and beverages, is in the midst of a battle between the Certified Color Mfrs Assn and the Nader-affiliated Public Citizen Health Research Group over certification. The FDA is also readying its sodium labeling proposal. Consumer groups have pushed to add sodium content amounts to the list of ingredients whose content must be specified. On the other hand, the FDA seems to be softening its stand on caffeine and food packagings with chemical additives of miniscule cancer risk. In 1975, the FDA proposed restricting PVC bottles because of the suspected link between vinyl chloride monomer and cancer. On a case-by-case basis, the FDA is approving packaging with additives that can be proven to cause less than 1 cancer death/1 mil people exposed.

*1USA *United States *2869200 *Food Additives *94 *regulation

R&S 140079

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1034716

There's new business for volume plastics--in cost-cutting and value-adding.
Modern Plastics International May 1984 p. 40-42

Five trends generate opportunities and problems for medical processors of volume thermoplastics. Public and private funding agencies, upon which nearly all medical facilities depend, are becoming more exacting in requirements for cost accountability, or are just cutting allotments. Replacement of nonplastics continues as medical facilities seek to reduce chance of infection, avoid breakage or gain disposability. New applications (eg disposable surgical kits) arise from the effort to improve medical procedures. Special performance demands of end users are growing due to new fields such as bioengineering and processes such as radiation sterilization. Inquiries continue into possible toxicity of materials used in medical applications. Some 225,000 m tons of PVC, PP, PE, PS and related copolymers were used in medical devices in 1983. Some 75% of PVC output went into flexible PVC, for which the predominant plasticizer is di-2-ethyl-hexyl-phthalate (DEHP or DOP), but DOP has been linked to liver cancer in lab animals.

The market for sterilizable medical plastics is about 400,000 tons, of which 27,000 tons (as of 1983) is sterilized by cobalt-60 gamma radiation, according to Princeton Polymer Labs. The outlook for gamma sterilization has posed a problem for users of vinyl and PP; at the 2.5 M-rad doses of gamma typically used, conventional PP suffers severe deterioration, PVC discolors and exhibits some property loss. Article discusses specialties that cut costs and the drive for cleaner resins.

*1USA *United States *2821030 *Thermoplastic Resins *34 *product specs
1USA United States 3079600 Medical Plastics 65 sales & consumptn

1031313

There's new business for volume plastics--in cost-cutting and value-adding.
Modern Plastics May 1984 p. 50-52

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*1USA *United States *2821030 *Thermoplastic Resins *34 *product specs
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1USA United States 3079600 Medical Plastics 65 sales & consumptn
1026100

PRW Special Report: Choice of material is wide - and critical.
Plastics & Rubber Weekly February 11, 1984 p. 7

World: Medical plastics need to withstand sterilisation temperatures of 134=C, to overcome increasing bacteria resistance. Major plastics used are polyethylene, polystyrene, styrene acrylonitrile, PVC and PP. Sterilisation methods include gamma radiation, for single-use items, sterilisation by ethylene, for single-use and reuseable articles, and steam sterilisation for reusable items. Higher sterilisation temperatures have led to new developments, including General Electric's (US) High Heat Lexan polyphthalate carbonate, which is superior to polysulphone under repeated sterilisation at 134=C. Other plastics used in medical applications include polyethylene and nylon composite films for sterile packs; matrix materials with carbon fibre, produced by film lamination, for lightweight artificial limbs; polystyrene beads for bone marrow cancer cell separation; and water reactive polyurethane dressings available as impregnated bandages to replace plaster of Paris.

*0 W *World *3079600 *Medical Plastics *34 *product specs

1021126

ALUMINUM ANSWER.

Packaging Review September 1983 p. 37,39

ICI packages its breast cancer drug in aluminum blisters for increased light protection. The Nolvadex tablets are packaged on a Uhlmann UPS 4ET blister line. Teflon plugs form the blister by pressing down into the cavity. The plugs only touch the material at the base and top of the tool. The pocket side wall profile is tailor-made at an angle design to ensure accurate filling and to prevent cracking-out of the aluminum. Aluminium Werke Singen produces the printed Nylon/aluminum foil/PVC laminate for the forming web. The lidding material is printed aluminum foil coated with heatseal lacquer that mates with the C of the formed web.

*4UK *United Kingdom *2834140 *Anticancer Drugs *46 *use of materials; *Imperial Chemical Industries

4UK United Kingdom 3074800 Plastic Blister & Thermoform Packs 33 products

4WGE West Germany 3071791 Metallized Film 33 products; Aluminium Werke Singen

980612

Sweden: Studies suggest alcohol may be involved in hepatocellular cancer.

SCRIP-World Pharmaceutical News November 28, 1983 p. 16

The incidence of primary liver cancer in women in Goteborg has shown a marked increase, rising to 6.2 cases/yr in 1978 from 1.6 in 1958. Primary liver cancer in men in the area still predominates. The study also suggests that although better diagnosis and demographic factors may account for some of the apparent increase, there appears also to have been a real increase, and further studies should be undertaken. They suggest the most important etiological factor in Sweden for hepatocellular cancers may be alcohol, as this would offer a reasonable explanation
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of the differences in incidence rate between men and women. Other suggested explanations include exposure to male hormones, vinyl chloride, arsenic, thorium dioxide or mycotoxins.

*5SWE *Sweden *8000221 *Cancer R&D *31 *science

928640

UK: Homes are gathering places for harmful natural radioactivity, according to a National Radiological Protection Board report.

New Scientist July 7, 1983 p. 3

Some 100,000 persons may be receiving more radiation from their homes than most workers in nuclear power stations. The radiation originates with radon gas that comes from rocks containing small quantities of uranium. It passes through holes in the floor and accumulates, especially in homes sealed to conserve energy. Regions where igneous rocks contain large amount of uranium, such as the highland areas of southwest and northern England, Scotland and Wales, face the most risk. In Cornwall, Aberdeen and parts of Yorkshire, especially high levels of radiation have been found. Some 400,000 people may be experiencing alpha radiation levels of over 5 millisieverts/yr (mSv), vs an average UK exposure level of 0.8 mSv/yr. About 1,000 households could be exposed to 25 mSv/yr.

The isotope radon-222 is a decay product of uranium-238. Other decay products such as polonium-218 and 214 also emit alpha radiation, which attaches to liquid and solid particles in the air to create a kind of radioactive aerosol. The radioactive materials can cause lung cancer when inhaled. The NRPB report suggests fitting PVC sheets below floorboards and blocking drains with foam plugs to reduce radon gas leaking into homes.

*4UK *United Kingdom *1520020 *Housing ex Mobile Homes *35 *product safety

4UK United Kingdom 1520020 Housing ex Mobile Homes 35 product safety

879357

CPSC is investigating the safety of di(2-ethylhexyl)phthalate, which is primarily used as a PVC plasticizer.

Chemical & Engineering News February 28, 1983 p. 36-37

A 1982 study by the Natl Toxicology Program found that DEHP and its metabolite, mono(2-ethylhexyl)phthalate, caused testicular damage, birth defects or embryo death in rodents. The use of DEHP in consumer products was evaluated for CPSC by A Little. In 1980, about 15% of all PVC products were made with the plasticizer representing about 354 mil lb of DEHP consumed. The items of greatest concern to CPSC are children's products made of soft plastic; Little has estimated that some 5.3-12.9 mil lb of DEHP was used in such items, including pacifiers, crib bumper pads, baby mattresses and plastic pants, with concentrations as high as 40%.

CMA has defended DEHP on the premise that the observed carcinogenicity of DEHP in rats and mice is caused by a quirk in their metabolism and is not a characteristic of the phthalate. In response to DEHP and other drugs, rats and mice produce peroxisomes, which are suspected of causing liver cancer. The bubblelike peroxisomes, which contain enzymes, are not expected to be produced in primates. CMA is currently conducting metabolism studies to demonstrate this, while testing other plasticizers such as butyl benzyl phthalate and diallyl phthalate to see if

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they display any adverse reactions. Further NTP tests will focus on mutagenic teratology, reproduction, skin absorption and the mechanisms of DEHP.

*1USA *United States *2869353 *Diethylhexyl Phthalate *94 *prod safety rules
1USA United States 2869353 Diethylhexyl Phthalate 94 prod safety rules

877005

FDA has agreed that alcoholic beverage containers with residual VCM levels of not more than 10 ppb will yield VCM migration to food at a level below the 'very safe level' developed by the agency's Bureau of Foods Cancer Assessment Committee.

Plastics Technology Magazine February 1983 p. 98

The FDA statement on liquor bottles came in response to a SPI request that the agency clarify its position on PVC alcoholic beverage containers. SPI has also asked that ATF ask FDA for an opinion on PVC liquor bottles. ATF's reluctance to request FDA action has more to do with politics than with the substance of the problem. Since BATF has already approved PET as liquor bottle material, suppliers of food-grade PVC compounds are pressing BATF to also approve PVC to give liquor packagers a choice.

*1USA *United States *3074315 *Plastic Wine & Liquor Bottles *94 *prod safety rules
1USA United States 3074315 Plastic Wine & Liquor Bottles 94 prod safety rules

842983

Metallgesellschaft (W Germany) carries out R&D in metal chemistry and chemicals which can be combined with metals.

Chemische Industrie November 1982 p. 781,782

Language: German

It is working on the chemistry of salts and compounds in lithium and caesium. Lithium carbonate is used as a fluoride substitute in glass enamel and to reduce fluoride emissions in the aluminium industry; lithium hydroxide is used in high quality fats; and lithium chloride in air conditioning and aluminium welding. New uses for caesium compounds being examined include optical glasses and in cancer research. The company's extensive range of plastics and rubber additives include accelerators for rubber vulcanisation, metal-rubber adhesives and stabilizers for polyvinyl chloride.

*4WGE *West Germany *3339645 *Cesium *45 *R&D outlays; *Metallgesellschaft
4WGE West Germany 2819951 Lithium 45 R&D outlays; Metallgesellschaft

782270

Installation of polybutylene pipe for domestic plumbing cost about 23% less in labor costs vs copper, according to Shell Chemical.

Plastics World June 1982 p. 6,7

M McMillan, a private environmental consultant, will prepare an environmental impact report on the use of plastic pipe for carrying drinking water. The research is funded jointly by the Society of the Plastics Industry and the California Pipe Trades Council, representing the state's plumbing unions. Each side will put up
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\$15,000 to defray costs. The report will be submitted to the California Housing & Community Development Commission, the state's codewriting organization. The California Supreme Court has refused to rule on a ban on distribution in California of the 1982 Uniform Plumbing Code published by the Intl Assn of Plumbing & Mechanical Officials. The code permits use of polybutylene, PVC, and chlorinated PVC in pipe used to carry drinking water in homes. These are the key resins disputed by the plumbers. The plumbers say the plastic pipe causes cancer and nervous disorders in people drinking water carried in plastic pipes and in plumbers who handle the pipe.

*1USA *United States *3076630 *Plastic Pipe, Water Supply *33 *applications
1USA United States 3076630 Plastic Pipe, Water Supply 33 applications
1USA United States 3076630 Plastic Pipe, Water Supply 34 product specs
1USA United States 3076630 Plastic Pipe, Water Supply 34 product specs
1USA United States 4940100 Fresh Water 35 product standards

R&S 140084

777416

Diocetyl phthalate (DOP) will capture over 30% of the plasticizers market by 19. . vs 25% in 1981, according to P Burger of Badische.
Chemical Business (Supplement to Chemical Marketing Reporter) May 31, 1982 p. 33-37

Although linear plasticizers have largely replaced DOP in some automotive applications due to antifogging requirements, a major disadvantage of linears is their lack of versatility. Diocetyl phthalate will hold on to its share of the wire and cable market. USS Chemicals Div and Tenneco Chemicals will jointly begin production of 210 mil lb/yr of phthalic anhydride and 190 mil lb/yr at Pasadena, Tex, in 1st-half 1983. Phthalic anhydride and 2-ethylhexanol are used as starting materials for DOP production. DOP dominated the plasticizer business 10 yrs ago, accounting for nearly 50% of sales. A major use of DOP was to impart softness to flexible PVC. Flexible PVC output skyrocketed to a peak 2.6 bil lbs in 1979, causing a serious shortage of DOP. Since not enough DOP was available to satisfy demand, long-chain linear plasticizers came into wider use. Another blow was dealt to the DOP industry in 1980 when the Natl Cancer Inst released a report on the carcinogenicity of DOP. Although EPA subsequently ruled that the data on which the study was based were incomplete and flawed, the Natural Resources Defense Council is demanding that DOP be banned.

Tenneco forecasts that DOP demand will rise to 1979 levels and may exceed it in 1983, but Conoco is less optimistic, projecting an excess capacity of DOP in 1983. Flexible PVC demand dropped to 2.3 mil lbs in 1980 and has remained flat. The outlook for DOP will depend on the flexible PVC market, which it must dominate to regain its position as the leading plasticizer.

*1USA *United States *2869354 *Diocetyl Phthalate *60 *market data
1548 Texas 2866131 Phthalic Anhydride 44 new capacity; USS Chemicals
1548 Texas 2866131 Phthalic Anhydride 44 new capacity; Tenneco Chemicals
1548 Texas 2868254 Ethyl Hexanol 44 new capacity; Tenneco Chemicals
1548 Texas 2868254 Ethyl Hexanol 44 new capacity; USS Chemicals

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741275

Natl Clean Air Coalition wants Congress to force EPA to limit emissions of hazardous air pollutants.

Chemical & Engineering News March 15, 1982 p. 5,6

Data from 4 studies done for EPA in 1979-80 reveal that 312 plants in 39 states emit at least 10,000 lb/yr of suspect toxic air pollutants. Some 11-21%/yr of lung cancer cases are probably attributable to air pollution, according to a recent study. In 12 yrs, EPA has set standards for only 4 pollutants--asbestos, beryllium, mercury and vinyl chloride. It has listed arsenic, benzene and radionuclides as hazardous but has not set emission standards for them, although the statutory deadline for setting a standard, 1 yr after listing, has passed. It has been studying 37 toxic pollutants, ranging from acetaldehyde to xylenes, without taking any action. According to D Diniger of the coalition, 'Millions of Americans living in the shadow of chemical plants, coke ovens and other factories are breathing chemicals that can cause cancer and other killing diseases.'

*1USA *United States *4954000 *Air Pollution Control *93 *pollution regulatn
1USA United States 4954000 Air Pollution Control 93 pollution regulatn
1USA United States 9106410 Air Pollution Control Programs 93 pollution regulatn
1USA United States 9106410 Air Pollution Control Programs 93 pollution regulatn

R&S 140085

740175

Sekisui Chemical (Japan) has developed a new type of PVC resin which needs plasticisers during processing, but is produced using vinyl acetate and other comonomers.

European Chemical News March 8, 1982 p. 26

The company hopes that the resin will find novel applications, including medical uses and applications in electrical apparatus. Some plasticisers used with conventional PVC have been associated with cancer, excluding them from use in the medical field. The company has filed for patents in Japan, the US and several European countries. (article contains little further information)

*9JPN *Japan *2821210 *Polyvinyl Chloride *33 *new product; *Sekisui Chemical

716350

The plasticizer-range alcohol market will grow to 1.6bil lbs by 1985, up 3.5%/yr vs 1979 figures, according to a study by Colin A Houston & Assoc.

Journal of Commerce January 12, 1982 p. 6A

Plasticizer alcohols involve those in the C6-C13 range and include 2-ethylhexanol, iso alcohols, linear alcohols and butyl benzyl alcohols. Plasticizers, the most important outlet for these alcohols, consume 70%/yr of plasticizer alcohol production. The major end-use for plasticizers is flexible polyvinyl chloride, which will grow over 2.5%/yr from 1979 levels through mid-1980. Individual phthalates, the general purpose plasticizers, account for 60% of the market. The study examines the intercompetition between di (2-ethylhexyl) phthalate vs diisononyl phthalate and diisodecyl phthalate vs linear phthalate. Specific end markets include plasticizers, PVC, acrylate, lube and fuel oil additives, surfactants and solvents. The study brings together scientific as well as

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regulatory opinions on the plasticizer cancer issue.

*1USA *United States *2868203 *Plasticizer Alcohols *65 *sales

706905

World: Plastics additives will be under stringent restrictions due to the establishment of stricter safety rules, according to the US Natl Cancer Inst.
Japan Chemical Week October 29, 1981 p. 4

The carcinogenicity of DOA as a vinyl chloride stabilizer has triggered much discussion worldwide. International discussions about standards for plastics and additives occurred between representatives of Japan, the US and the EEC at a conference held for the unification of plastics at Edinburgh, Scotland. It is necessary to unify standards for plastics, especially because of their applications in the food industry.

*0 W *World *2869310 *Plastic Additives *35 *product standards
0 W World 2821000 Plastic Materials 35 product standards

680170

Safety regulations may be a stumbling block for the plastic pipe industries.
Chemical Business (Supplement to Chemical Marketing Reporter) September 21, 1981
p. 38,39+

" The California Housing & Community Development Commission (HCDC) has denied approval for new uses of pipe made from polyvinyl chloride, acrylonitrile-butadiene-styrene, chlorinated PVC and polybutylene, claiming health hazards against pipe resin producers. The California Pipe Trades Council claims that plastic piping is hazardous to the populace and has caused cancer in plumbers and pipefitters in particular. California Analytical Labs was commissioned by CPTC to test PB leaching in water and found concentrations up to 500 ppm. Hence, HCDC yanked PB pipe's approval. Shell Chemical was outraged by this action because it was counting on the California market to soak up excess output from the 50 mil lb/yr plant at Taft, La. PVC is the largest-volume resin in the plastic pipe resin. Sales rose 8.4%/yr in 1976-80, while drain, waste and vent sector sales of ABS fell about 12%/yr. Plastic pipe consumption is expected to rise 8-9%/yr until 1990 and over 2.8 bil lbs were laid in 1980.

*1USA *United States *3076600 *Plastic Pipe & Fittings *94 *prod safety rules
1USA United States 3076600 Plastic Pipe & Fittings 94 prod safety rules
1USA United States 3076600 Plastic Pipe & Fittings 94 prod safety rules
1USA United States 9018633 *** 94 prod safety rules
1USA United States 9018633 *** 94 prod safety rules

677513

The US PVC industry is optimistic about winning a case over the banning of 2 PVC plasticizers.

#Business Week Industrial Edition September 7, 1981 p. 92F,92H

Diethylhexyl phthalate (DEHP) and diethylhexyl adipate (DEHA) are the
(cont. next page)

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controversial plasticizers, which lend flexibility to stiff PVC products, such as plastic meat wrap and toys. EPA and FDA fear migration from the plastic wrap into meat and contamination from landfills into major cities' water supplies may be serious, long-term environmental hazards with a significant cancer risk. Dr EN Skiest, chairman of the FDA plasticizer task force within CMA and technical director for chemicals at Borden, lacks faith in the study by the National Cancer Inst because 'the dose was too great and the animals were under extreme stress.' Major plasticizer producers are developing alternate compounds. The FDA is not pushing hard to ban the PVC plasticizers because there are no effective substitutes and they risk being overruled by Congress. Washington is working with industry, allowing private research with govt regulation for product health risks. This might lead to selective restrictions. No action seems immediate.

*1USA *United States *2821210 *Polyvinyl Chloride *35 *product safety
1USA United States 2869350 Plasticizers 35 product safety

655444

Plastics use in medical applications is receiving attention from the industrial sector, according to Margolis Marketing & Research.
Chemical Marketing Reporter June 15, 1981 p. 3,30

Progress is being made in producing biocompatible polymers to advance surgical techniques. Polyvinyl chloride and a crylonitrile cast on woven polyethylene cloth form a membrane oxygenator for blood. When these membranes are coated with ultra low-temperature isotropic carbon the compatibility of the membranes are improved. Two types of artificial skin are being developed-- one is used to displace air pockets around wounds due to burns, and a long-term artificial skin which is biodegradeable. The most significant development in synthetic implants is a permanent artificial heart of elastomeric polyurethane to be ready for use in 1981. Bone cement's effectiveness is related to the viscosity of cement during application. Methyl methacrylate and polymethyl methacrylate are low viscosity cements and acrylate-styrene copolymers produce a viscosity cement that allows controlled progression from the fluid stage to setting. Therapeutic chemical plastic capsules can be inserted directly into the needed area reducing the side effects. Time-release capsule implants will be used with drugs, enzymes antibiotics, microbial cells, for treatment of cancer; delivery of contraceptive steroids, anti-nausea drugs, prevention of dental caries, topical treatment of burn wounds and administering tranquilizers and hypertensive agents. Nylon 6 coating on activated charcoal is being considered for absorption control for detoxification of blood in drug overdose cases and uraemia.

*1USA *United States *2821000 *Plastic Materials *33 *applications
1USA United States 3840000 Medical Instruments & Supplies 46 materials use

650466

The US plasticizer industry is hesitant to comment on EPA's recent preliminary risk assessment of DOP.
Chemical Week June 24, 1981 p. 18

There has been some concern that a study indicating cancer risk would lead to a ban. BASF, a major factor in the 1.3 bil lb/yr phthalates market, found National
(cont. next page)

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Toxicology Program's conference on phthalates to be fair, and no one in the marketplace is seriously looking for alternatives. Exxon, which has plasticizer capacity of 300 mil lbs/yr and is the leading US producer of di-iso-nonylphthalate, claims that there is currently no need for an alternative to phthalate esters, especially in the PVC market. Baxter Travenol claims that there has been the equivalent of 3 mil patient yrs of exposure to DOP in the form of PVC blood bags with no apparent causal relationship between its use and cancer. Tenneco Chemicals finds it hard to imagine a situation where DOP was banned and similar phthalate plasticizers were not, but believes some restrictions may be made on the plasticizer in the area of allowable exposure, currently 5 mg/m³ of air in 24 hrs. Typical exposure in a plasticizer plant is about 0.25 mg/m³ in 24 hrs. In the short term, there is not enough US output of the 2 preferred DOP substitutes to fill a gap caused by DOP's disappearance. Plasticizer alcohols from Europe will fill that need until US production recovers. Current US demand for DINP and DIDP is 350 mil lbs/yr, with demand for individual plasticizers at 175 mil lbs/yr each. US demand for DOP is 300-400 mil lbs/yr. The govt has not yet decided what type of testing to allow for alkyl phthalates. EPA should receive a draft copy of CMA's latest proposal soon, but the plan would be reviewed for months.

*1USA *United States *2869351 *Phthalate Plasticizers *35 *product safety

649268

World: Pigments should replace electroplating as the major end use for cadmium in a few years, according to speakers at the Third Intl Cadmium Conference.
#Metal Bulletin Monthly May 1981 p. 55-59

Consumption for plating has fallen since 1965 to 33% of total world consumption vs 50%, largely due to environmental problems, while growth for pigments has risen in tonnage and as a proportion of the total world cadmium market. Growth in cadmium stabilisers has also been substantial since 1965, due to their use to stabilise PVC, while nickel cadmium rechargeable batteries now account for 17% of total cadmium use, vs 7% in 1965. In Japan, batteries account for 40% of cadmium consumption. The share taken by alloys has fallen to 6% vs 8% in 1965, and demand for cadmium-containing alloys is unlikely to rise. World cadmium production in 1979 was 14,600 tons, and growth was 3%/yr from 1966. Consumption patterns have changed considerably, with Europe now taking 50% of world cadmium output, vs 40% in the mid-1960s, and the US taking 33%, vs 50%. Japanese consumption fell sharply following the outbreak of itai-itai disease, which effectively closed down cadmium plating. Sweden will restrict the use of cadmium for pigments, stabilisers and coatings from mid-1982, applicable to imported products containing cadmium as well as domestic production. Due to fears of further cadmium restriction, the search for cadmium substitutes has intensified. BJ Wixson of the U of Missouri-Rolla attributed 20% of cadmium released into the environment by the primary nonferrous metals industries, 30% to the use and disposal of cadmium, and 50% as inadvertently derived from fossil fuels, sewage sludge and phosphate fertilisers. Environmental cadmium was estimated at 2,100 tons in 1980, vs 1,800 tons in 1974-75. Of this, 90% should be bound in soil, sediment and aquatic sinks in an environmentally acceptable manner, while the remainder could be effectively controlled. There was no data showing that cadmium is associated with any type of cancer, except that of the prostate, and that even here inducement by cadmium does not seem likely.

*0 W *World *3339640 *Cadmium *65 *consumption

R&S
140088

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606442

Tenneco Chemicals Inc has been charged with Clean Air Act violations due to discharges of vinyl chloride from its Burlington, NJ, plant.

Chemical Marketing Reporter January 5, 1981 p. 5,18

The govt is seeking \$450,000 in civil penalties and an injunction from further releases. The firm allegedly released over 10,000 lbs of VC on 17 occasions in 1978 and 1979, and is charged with having failed to report 1 of the discharges. Each discharge, including the unreported release, can be penalized in the amount of \$25,000. Vinyl chloride has been implicated in human cases of a rare form of liver cancer and other disorders in people with occupational exposure and in animals with experimental contact.

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

1USA United States 2868122 Vinyl Chloride Monomer 93 pollution regulatn; Tenneco Chemicals

577617

ASTMS, the UK white collar union, is seeking to reduce vinyl chloride monomer exposure levels to a maximum of 1 ppm.

Chemical Age now Manufacturing Chemist & Aerosol News see MfrChemAer August 8, 1980 p. 8

The current TLV level of 3 ppm was specified in the EEC directive of 1978. The union also wants more generous compensation for workers exposed to the higher levels of VCM in operation before 1974. According to results from research at the Bologna Cancer Inst, carcinogenic response can be induced at 1 ppm. The ASTMS wants the vinyl chloride working party of the UK's Advisory Committee on Toxic Substances to reconvene. The working party includes union, industry and Health & Safety Commission representatives. European VCM producers are working towards a TLV of 3 ppm under a voluntary code of practice, vs a target of 1 ppm in the US and Sweden.

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

4UK United Kingdom 2868122 Vinyl Chloride Monomer 93 occupatnl safety

4UK United Kingdom 9108651 Occupational Safety Regulation 93 occupatnl safety

4UK United Kingdom 9108651 Occupational Safety Regulation 93 occupatnl safety

565623

EPA will develop 2 new rules requiring warning labels on hazardous chemicals and mixtures, one rule for acute hazards and one for cancer hazards.

Chemical & Engineering News June 30, 1980 p. 14

Substances listed under the cancer-hazard rule include acrylonitrile, benzene, chloroalkyl ethers, chloroform, DDT, hydrazine, nickel and its compounds, nitrosamines, polychlorinated biphenyls, trichloroethylene and vinyl chloride.

*1USA *United States *2800000 *Chemicals *94 *consumer protectn

1USA United States 9138600 Environmental Protection Agency 94 consumer protectn

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562022

Cancer risk from exposure to VCM and PVC may occur at levels lower than previously thought, says OSHA, based on UK research.
Hydrocarbon Processing May 1980 p. 13

*1USA *United States *2821210 *Polyvinyl Chloride *93 *occupatnl safety
1USA United States 2821210 Polyvinyl Chloride 93 occupatnl safety
1USA United States 2868122 Vinyl Chloride Monomer 93 occupatnl safety
1USA United States 2868122 Vinyl Chloride Monomer 93 occupatnl safety
1USA United States 9108651 Occupational Safety Regulation 93 occupatnl safety
1USA United States 9108651 Occupational Safety Regulation 93 occupatnl safety

561108

EPA has put arsenic on its list of hazardous air pollutants, saying there is a high probability that inorganic arsenic can cause cancer in humans.
Chemical Marketing Reporter June 9, 1980 p. 3,45

Arsenic joins asbestos, beryllium, mercury, vinyl chloride, benzene and radionuclides on the list. Inorganic arsenic emissions into ambient air are over 6,000 tpy, with about 65% of this amount coming from copper, lead and zinc smelters, according to data by SRI International in a report to EPA.

*1USA *United States *2819903 *Arsenic & Compounds *93 *pollution regulatn
1USA United States 2819903 Arsenic & Compounds 93 pollution regulatn
1USA United States 4954000 Air Pollution Control 93 pollution regulatn
1USA United States 4954000 Air Pollution Control 93 pollution regulatn
1USA United States 9138600 Environmental Protection Agency 93 pollution regulatn
1USA United States 9138600 Environmental Protection Agency 93 pollution regulatn

541184

OSHA is reexamining vinyl chloride monomer's safety in a March 1980 meeting attended by representatives of industry, govt, unions and independent researchers.
Journal of Commerce March 13, 1980 p. 5

Existing rules don't allow over 1 ppm exposure in 8-hrs. Data indicating that VCM exposure could lead to brain, lung and lymphatic hematopoietic cystic cancer and that PVC dust could be a health hazard will be discussed.

*1USA *United States *2868122 *Vinyl Chloride Monomer *94 *labor regulatn
1USA United States 9125300 Occupational Safety & Health Adm 94 labor regulatn

525649

OSHA is reviewing its exposure standards for vinyl chloride and PVC dust, following the publication of studies suggesting higher cancer and pneumoconiosis incidence among vinyl chloride and PVC fabrication workers.
Chemical Week January 2, 1980 p. 10

It is asking for information and comments. Chem Eng 1/14/80 p57 C&E News 1/14/80
(cont. next page)

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p17

*1USA *United States *2821210 *Polyvinyl Chloride *93 *occupatnl safety
1USA United States 9125300 Occupational Safety & Health Adm 93 occupatnl safety

481179

A CPSC study suggests use of short-term, high-dose lab studies of carcinogens.
Chemical & Engineering News May 7, 1979 p. 14

The study examined the effects of inhalation of high doses (up to 50,000 ppm) of vinyl chloride on rodents. Most inhalation-based studies have involved relatively small doses given routinely over long periods. Only mice, not rats, demonstrated any carcinogenic effects from exposure to vinyl chloride and the single-dose experiments at the highest dose levels produced only benign tumors, which subsequently failed to progress to malignant tumors. Pneumonitis--acute, localized lung inflammation--was evident in all animals receiving doses of 500 ppm or more. Most toxicologists think that a dose of a chemical that makes an animal acutely ill should not be used in carcinogenicity studies, since results may be unrelated to the compound's cancer-inducing potential.

*1USA *United States *8000200 *Medical Research *39 *research nec
1USA United States 9138700 Consumer Product Safety Com 39 research nec

469569

Vinyl chloride monomer levels in PVC have been effectively controlled and reduced in the UK through cooperation between govt and industry, according to the Min of Agriculture.

Plastics & Rubber International March 9, 1979 p. 10

Exposure to VCM may cause a rare liver and blood vessel cancer. World surveys estimate that worker exposure levels for VCM or PVC have dropped from 1,000 ppm in 1943 to 150 ppm in 1973.

*4UK *United Kingdom *2868122 *Vinyl Chloride Monomer *93 *occupatnl safety
4UK United Kingdom 2868122 Vinyl Chloride Monomer 93 occupatnl safety
4UK United Kingdom 2821210 Polyvinyl Chloride 93 occupatnl safety

468993

NIOSH has found further evidence of brain cancers among chemical workers in Texas plants.

Chemical Week March 14, 1979 p. 19

At Monsanto's Texas City, Tex, chemical intermediates plant, NIOSH found 5 deaths were due to brain tumors, 2 of which could have been caused by glioblastoma multiform--the cancer to which the deaths of 9 employees of Union Carbide's Texas City, Tex, plant were attributed. Initial indications were that the deaths at both plants could be tied to vinyl chloride monomer, but an OSHA industrial hygienist says several chemicals are being studied, including acrylonitrile, ethylene oxide, polyethylene and their intermediates and that it is too early to make a judgment on the tumors' cause.

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*1USA *United States *2800000 *Chemicals *93 *occupatnl safety; *Monsanto; Duns No: *00-626-6803; Ticker: *MTC; CUSIP: *611662

1USA United States 9124221 Natl Institute of Occ Safety & Health 93 occupatnl safety

1USA United States 9124221 Natl Institute of Occ Safety & Health 93 occupatnl safety

1USA United States 2800000 Chemicals 93 occupatnl safety; Monsanto; Duns No: 00-626-6803; Ticker: MTC; CUSIP: 611662

464857

OSHA and NIOSH are investigating brain-tumor deaths at Union Carbide's Texas City, Tex, plant.

Chemical Week February 28, 1979 p. 22

Eleven cases were uncovered, including 10 deaths, 9 of which were from a form of cancer called glioblastoma multiform. The total number of tumors is high for the number of workers. Vinyl chloride monomer is the leading suspect, since several studies have linked it to glioblastoma; VCM is most commonly associated with angiosarcoma, a liver cancer. Other possible causes of brain tumors will be studied, including ethylene oxide and acrylonitrile. The link is tentative; a OSHA-NIOSH investigation team is gathering data.

*1USA *United States *2868122 *Vinyl Chloride Monomer *93 *occupatnl safety; *Union Carbide; Duns No: *00-128-9008; Ticker: *UK; CUSIP: *905581

1USA United States 2868122 Vinyl Chloride Monomer 93 occupatnl safety; Union Carbide; Duns No: 00-128-9008; Ticker: UK; CUSIP: 905581

464077

The US govt has completed a report designed to help regulators decide when a compound is actually carcinogenic.

Daily News Record February 12, 1979 p. 23

The report, issued by OSHA, EPA, FDA and the Consumer Product Safety Commission, covers such issues as defining a carcinogen, deciding to what extent it is possible to create a risk-free environment and judging the use of animal studies in assessing human health risks from carcinogenic agents. Of about 70,000 chemicals now in commercial production, only 1-2% have been studied for carcinogenic potential using current methods. Some 26 substances are known to cause cancer in people, based on direct observation of exposed human populations. These include vinyl chloride, asbestos, arsenic compounds, chromium, mustard gas and nickel.

*1USA *United States *2800000 *Chemicals *94 *prod safety rules

1USA United States 2800000 Chemicals 94 prod safety rules

439069

Work related cancers may account for 20-38% of the total cancers occurring in the US over the next 30-35 yrs, vs.

Chemical Week September 20, 1978 p. 22

conventional estimates of 1-5%, according to a study by the National Cancer Inst
(cont. next page)

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and the National Inst of Environmental Health Sciences. The report will be submitted as evidence to OSHA, and the authors want it to be used as part of the data on which OSHA will base its regulatory policy. The study predicts 2.15 mil persons will suffer cancer attributable to asbestos over the next 30-35 yrs (67,000 cases/yr or 17% of all cancers detected/yr). Arsenic, benzene, coal-tar pitch volatiles and coke oven emissions, and vinyl chloride will result in 1-3% of the cancers/yr. Chromium, iron oxide, nickel and petroleum distillates will contribute to 3-18% of the cancers/yr.

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

435213

Research into vinyl chloride monomer in food packaging in S Africa is likely to result from a report by Kr K Ivanetich of Cape Town U suggesting that only independent studies would prove whether levels of VCM in S African foods were high enough to cause cancer or other diseases in consumers.

Plastics & Rubber Weekly June 30, 1978 p. 10

Xacties (Pty) Ltd, the largest S African manufacturer of PVC bottles, has claimed that precautions the firm has taken have resulted in a maximum level of 0.5 ppm of VCM (French, German and Japanese standard is 1 ppm). No govt body or agency could demonstrate whether these levels could have an adverse effect on the human body.

*7SOA *South Africa *2868122 *Vinyl Chloride Monomer *35 *product safety
7SOA South Africa 2868122 Vinyl Chloride Monomer 35 product safety
7SOA South Africa 3070001 Plastic Packaging Materials 35 product safety

409875

UK doctors suggest that vinyl chloride monomer (VCM) may not be as serious cancer hazard as formerly supposed.

Plastics World February 1978 p. 42

In a recent article in the British Medical Journal, 3 doctors affiliated with the Health & Safety Executive (similar to the US OSHA) reviewed a preliminary report by the agency on the incidence of liver cancer in the UK which found that only 47 cases of diagnosed liver cancer reported in 1963-73 were confirmed. Of the 14, only 1 case, that of a worker who had probably been exposed to VCM concentrations exceeding 200 ppm in the air for more than 20 yrs, could be 'confidently associated' with VCM. The VCM exposure standard in the UK is 10 ppm averaged for an 8-hr day.

In the case of the population living near PVC-using plants, liver cancer was found only in 1 man who lived within a 1/2 mile of a PVC plant for 6 yrs; but no correlation could be found between the incidence of the disease in the general population and the location of PVC operations. The report also failed to find any cases of the disease that could be attributed to ingesting VCM from foods contained in PVC packaging materials. The 10-yr study indicated that the incidence of liver cancer in the UK appears to be considerably less than 10 cases/yr in a population of 50 mil. A govt spokesman said that the findings gave grounds for hope that VCM will turn out to be less of a cancer risk than when the US findings were announced.

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*4UK *United Kingdom *2868122 *Vinyl Chloride Monomer *35 *product safety
4UK United Kingdom 2868122 Vinyl Chloride Monomer 35 product safety

406829

A rapid, precise, and specific method for analysis of vinyl chloride (VC) at the sub-ppb level in water samples is described by Toshihiro Fujii, National Institute for Environmental Studies, Japan.

Analytical Chemistry November 1977 p. 1985-87

The method involves the use of mass fragmentography of the gas chromatography-mass spectrometry by simultaneously recording m/e 62 and 64 after direct aqueous injection of a large sample (1,000 micron-L) on the precolumn (diglycerol as a liquid phase) with no concentration or extraction required. Several tap waters in Tokyo areas were tested, and VC was not found to be present.

Vinyl chloride (VC) has been identified as a carcinogen that is likely to be related to human cancer. Recently, VC at the 0.1-ppb level was discovered in the drinking water of US cities.

*9JPN *Japan *3832631 *Gas Chromatographs *32 *new process

402992

WUITAS Inc' nationwide electronic mail service, Phone-A-Copy, utilizes facsimile and is available to the public.

Telephony January 2, 1978 p. 16

Customers using the service can send or receive any documents, at any time of the day or night, seven days a week.

A Phone-A-Copy communications center can transmit or receive documents to and from any other Phone-A-Copy center, another commercial or public facsimile center, or a corporate location having its own facsimile equipment. At first

971-December 1973 have sparked an intensive investigation by the company. The employees had worked in the Louisville, Ky, plant's vinyl chloride/polyvinyl chloride operations and all died of liver cancer tentatively diagnosed as angiosarcoma. The nationwide incidence of death from this cause last year occurred at a rate of only 21 per year.

*1USA *United States *4811900 *Misc Telephone Svcs *36 *new services; *WUI/TAS

383298

New Jersey, with the highest cancer rate in the US, may ban 16 industrial cancer-causing agents from the state.

Environmental Science & Technology March 1977 p. 223

Among the chemicals that would be subjected to zero emissions standards are vinyl chloride and asbestos.

In Nov 1976, the state's voters approved the 'New Jersey Clean Waters Bond Act of 1976.' The act authorizes the sale of \$120 mil in bonds to be used for the planning, construction and maintenance of water pollution control and water supply facilities.

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