UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY

EUGENE MALIKO, et als.,	:	Honorable Lee H. Sarokin Civil Action NO. 76-1533
Plaintiffs,	:	
vs.	:	DEFENDANT'S STATEMENT OF FACTS: ATTACHMENT TO #6 OF THE PRETRIAL ORDER
UNION CARBIDE CORPORATION,	:	
Defendant.	:	

A. Introduction:

The defendant Union Carbide Corporation ("Union Carbide") is a corporation of the State of New York and is authorized to do business in New Jersey. Its business is, int r alia, the manufacture and sale of chemicals and plastics. As part of that business, Union Carbide manufactured vinyl chloride monomer from the early 1930's until August 1, 1969. Also, from the early 1930's until the present, Union Carbide has manufactured polyvinyl chloride resins. Other products that have been manufactured by Union Carbide include polyethylene, polystyrene and bis-phenol-A.

Union Carbide owns a terminal in Perth Amboy, New Jersey, to which, since approximately 1961, Union Carbide has shipped polyvinyl chloride resins, polyethylene, polystyrene and bis-phenol-A for storage, repackaging and reshipping. Since its inception, the terminal has been operated by OTD Corporation and its successor, Amboy Terminaling Company (herein collectively referred to as "Amboy"), pursuant to a contract with Union Carbide. Union Carbide has never shipped vinyl chloride monomer, which is a gas, to Amboy.

Plaintiffs, Arthur Schaffer and Harry Wilkinson, and the decedents, Eugene Maliko and Henry Mazanowski, were employees of Amboy at various times. The Amended Complaint alleges that Messrs. Schaffer and Wilkinson and the late Messrs. Maliko and Mazanowski were exposed at the terminal to polyvinyl chloride, vinyl chloride monomer, and other "dangerous, noxious and carcinogenic chemicals" manufactured by Union Carbide while employees at Amboy; and, that as a result of said exposure, they have respectively contracted varying ailments, more fully reviewed below.

B. The Manufacture of Vinyl Chloride Monomer and Polyvinyl Chloride.

The manufacture of vinyl chloride monomer is carried out in large chemical plants with capacities of 200,000 tons or more per year where ethylene, a gas, is treated with chlorine, oxygen and hydrogen chloride yielding ethylene dichloride (1.2 dichloroethane), a liquid. This ethylene dichloride is cracked (dehydrochlorinated) in a furnace yielding vinyl chloride monomer and hydrogen chloride, both of which are gases. These gases are collected, separated and purified. The hydrogen chloride is recycled. The vinyl chloride monomer is liquified with pressure and refrigeration.

The manufacture of synthetic resins from vinyl chloride and other monomers involves reacting these monomers in agitated pressure vessels in the presence of catalysts and converting these liquids and/or gases to solid resins. A considerable amount of heat is generated by the reaction and this is removed by cooling the vessel. As the monomer is consumed during the reaction, the rate of reaction slows down and the heat transfer surfaces of the vessel become coated with solid resin. After some optimum reaction

time, the unconverted monomer is removed from the reacting mass by heat and vacuum and the resin (pvc) is recovered as a dried white powder or as a liquid latex of solution.

There are presently four main processes for the manufacture of pvc resins:

1. Suspension polymerization.
2. Emulsion (dispersion) polymerization.
3. Bulk polymerization.
4. Solution polymerization.

The manufacture of finished and semi-finished plastic articles from pvc resins is a relatively simple operation, but many different procedures are used depending upon the type of pvc resin used and the properties desired in the final product. Most of the suspension and bulk polymerized resins are mixed with plasticizers, stabilizers, pigments and processing aids and heated to form a compound which is molded, extruded or calendered. Dispersion (emulsion) pvc resins are mixed with similar materials to make a thick liquid compound which needs only to be heated to form a plastic article. Solution polymerized resins are dissolved in solvents and applied as coatings.

C. History and Research

As set forth above, Union Carbide began to engage in the manufacture of polyvinyl chloride resins in the early 1930's. Since 1930, Union Carbide has sponsored numerous studies by the Carnegie Mellon Institute and has joined various industry organizations, including Manufacturing Chemists Association (MCA) and Society of Plastics Industries (SPI), in sponsoring research on the toxic effects, if any, of vinyl chloride monomer and polyvinyl chloride. Additionally, Union Carbide personnel have studied publications & literature on this form of research.

(1) Poly Vinyl Chloride

The following is a more detailed summary of action taken by Union Carbide to study the possibility of toxicity or human dangers from exposure to vinyl chloride monomer. All of the studies mentioned herein and/or known to Union Carbide will be more fully explained by way of expert testimony.

In 1937, a Chemical Hygiene Fellowship under Dr. Henry F. Smyth was established by Union Carbide at the Mellon Institute of Research in Pittsburgh, Pennsylvania.

In 1944, a two-year chronic oral feeding study of PVC resin VYNU to rats was started by Dr. Henry Smyth and Dr. Carrol Weil.

In 1940, studies of skin sensitization by pvc resins and compounds were initiated at the Mellon Institute by Dr. Smyth. These studies indicated that pvc resins and compounds were not irritating to the skin or likely to cause dermititis.

In 1947, Drs. Smyth and Weil reported on work at Mellon Institute: "Chronic Oral Toxicity to Rats of Vinyl Chloride-Vinyl Acetate Copolymers;" their conclusion was that no rats died from any possible adverse effect of the vinyl resin fed in the diet.

In 1962, the toxicity studies by Torkelson, et al, and Lester, et al, became generally known. Since the ACGIH approved a 500 ppm vinyl chloride monomer ceiling, Union Carbide saw no need to take any action, since its plants were well below this ceiling level as far as the work space air was concerned.

In 1966, Union Carbide representatives met with the Manufacturing Chemists Association (MCA) to discuss reported

acroosteolysis (a condition of resorption of bone in the tufts of the fingertips) at the B. F. Goodrich Chemical Company plants. B. F. Goodrich's Dr. R. H. Wilson reported his observations to the meeting of the Manufacturing Chemists Association in Cleveland. He had noted evidence of acroosteolysis in some workers since 1962. In response to the revelations of Dr. Wilson, the Manufacturing Chemists Association industry representatives agreed to cooperatively sponsor an investigation of the reported disease. The University of Michigan Institute of Industrial Health was employed to conduct an epidemiological study of the industry to determine the extent and the causes of the disease.

In 1969, the University of Michigan Institute of Industrial Health, after a wide ranging investigation of the entire vinyl chloride-polyvinyl chloride industry, reported to MCA that identification of the causative agent or agents was inconclusive with regards to acroosteolysis. After a careful review of the results of the study, industry representatives concluded that in view of the apparent close association between vinyl chloride monomer exposure and cleaning polyvinyl chloride reactors the exposure of polyvinyl chloride reactor cleaners should be limited to 50 ppm vinyl chloride and they should wear impermeable gloves while cleaning reactors of their PVC scrap.

Since there was no vinyl chloride monitoring device which could be readily used in the plant to monitor reactor cleaner exposure, Union Carbide developed a method to determine the vinyl chloride concentration using Mine Safety Appliance Company's chlorinated hydrocarbon Type A detector tubes part No. 85833 for a rapid measurement of vinyl chloride inside the reactors while they were being cleaned. This newly developed

method, made available to all interested industry representatives, was used to m nitor work practices at Union Carbide Corporation's PVC plants. In addition, a system for solvent cleaning of reactors in the Union Carbide PVC suspension resin plant in Texas City was developed and installed. With this installation, the only PVC reactors that were still cleaned by hand were those used in the dispersion PVC plant, South Charleston and in the Union Carbide bulk polymerization plant in Texas City. These reactors, which were hand cleaned, were more intensively purged and monitored to be sure that worker exposure did not exceed 50 ppm.

In 1970, Dr. P. L. Viola, of the Regina Elena Institute for Cancer Research, University of Perugia, Italy, reported at the Tenth International Cancer Congress, Houston, Texas on the carcinogenic effect of vinyl chloride monomer on rats, which had been massively exposed to 30,000 ppm vinyl chloride for 12 months. He stressed at the meeting that the results applied only to rats and no implication to human pathology could be extrapolated.

In May 1971, the Manufacturing Chemists Association Occupational Health Committee invited Dr. Viola to the United States to discuss his studies in greater detail. Dr. Viola reaffirmed his belief that 500 ppm TLV provided an adequate margin for employee safety of tumor induction. In November of 1971, the Manufacturing Chemists Association convened a meeting with the vinyl chloride-PVC industry representatives to discuss the apparent vinyl chloride problem revealed by Dr. Viola. The group formed an Ad Hoc Committee under R. N. Wheeler, Jr. of Union Carbide, to plan a cooperative research program. This committee proposed a program involving a three-level, three species cnronic inhalation toxicity study, a study of vinyl chloride metabolism,

and an industry-wide epidemiological study of mortality, at an estimated cost of $350,000.

In 1972, the American Congress and Governmental Hygienists lowered its recommended TLV for vinyl chloride workers to 200 ppm 8-hr. TWA. Union Carbide continued to observe the goal of less than 50 ppm. The Ad Hoc Committee of MCA contracted with Industrial Bio-Test Laboratories to make the long term, three level, three species chronic inhalation study. An MCA representative, Dr. Bertram Denman, was sent to Europe to determine the nature of their vinyl chloride toxicity program. He returned from his trip without any new information as to the nature of the European program.

In 1973, the Manufacturing Chemists Association, including Union Carbide, contracted for the metabolism study by Dow Chemical and the industry-wide epidemiological study by Tabershaw-Cooper Associates.

Union Carbide, concerned as to its employees' health, developed a method for monitoring the work space air, based on sample adsorption on a carbon tube followed by analysis via gas chromatograph. A program of work space air monitoring was initiated both at South Charleston and Texas City.

In 1974, as a result of the report from B. F. Goodrich Company and the preliminary results from Dr. Maltoni's studies in Europe, Union Carbide purchased five automatic gas chromatographs to monitor work space air in its PVC operations. Additionally, it made its South Charleston plant facilities available to NIOSH for an intensive study of vinyl chloride exposure and health effects. Union Carbide also developed a

method of analysis to determine the residual vinyl chloride in its PVC resins and started regularly monitoring the residual vinyl chloride monomer content of its resins. To aid the industry in general, Union Carbide assembled its methods of analysis on monitoring procedures and published them in a book entitled, "Monitoring Vinyl Chloride in the Work Space Air." This book was made available to all customers and to all other members of the vinyl chloride-PVC industry. As a matter of policy, Union Carbide Corporation also followed the recommendation of the NIOSH preliminary vinyl chloride standard published before the OSHA emergency temporary standard was promulgated.

Union Carbide also joined with others through Organization Resources Counsellors to sponsor an epidemiological study of the PVC fabricating industry. The purpose of this study was to determine if there was evidence of occupational health problems at the very low exposure levels in the PVC resin being used and handled in industry.

In 1975, the Occupational Safety and Health Administration's permanent standard for the occupational exposure of workers to vinyl chloride was promulgated. Union Carbide complied with this standard. It also purchased 4 more automatic chromatographs to supplement the 5 that were presently being used to monitor the work space air in the vinyl chloride-polyvinyl chloride manufacturing facilities.

Union Carbide has additionally continued to support research sponsored by the Manufacturing Chemists Association, by the Society of the Plastics Industry and by other organizations in an effort to determine the full nature and extent of the vinyl chloride problem.

(a) Exposure levels.

Until recently, there was no effective means to measur vinyl chloride molecules in the air. Notwithstanding, in 1962 the American Congress of Governmental Industrial Hygenieists (ACGIH) recommended that vinyl chloride exposure for workmen not exceed 500 ppm for an 8 hour time weighted average (TWA). Limits were set at concentrations believed to cause no adverse effect with repeated exposure. In 1963, the ACGIH recommended, instead, a 500 ppm threshhold limit value (TLV).

On October 18, 1972, the Occupational Safety and Health Administration (OSHA) set the vinyl chloride exposure limit at a ceiling value of 500 ppm (1300 mg/m3). Then ACGIH lowered its recommended vinyl chloride exposure limit to 200 ppm TLV. OSHA made no change in its standard. On April 5, 1974, OSHA set a temporary vinyl chloride standard limit at 50 ppm ceiling. In April, 1975, the OSHA permanent standard became effective lowering the vinyl chloride exposure limits to 1 ppm maximum for an 8 hour weighted average or 5 ppm maximum for any period not exceeding 15 minutes.

(2) Polyethylene, Polystyrene and Bis-Phenol-A.

As early as 1944 the Carnegie Mellon Institute commenced toxicity studies of polyethylene for Union Carbide which studies showed a very low order of toxicity. The same result was reached by that Institute in 1973 with respect to polystyrene studies sponsored by Union Carbide. That Institute's studies of bis-phenol-A in 1946 for Union Carbide showed only that skin contact may cause eye injury. In addition, Union Carbide kept abreast of all relevant literature as it was current.

D. Union Carbide's Products At Amboy:

No vinyl chloride monomer was shipped to Amboy. The polyvinyl chloride resins shipped by Union Carbide to Amboy were in bulk powdered form and were manufactured by one of the following processes: 1) suspension polymerization; 2) bulk polymerization; and 3) solution polymerization. No resins manufactured by the emulsion (dispersion) polymerization process were shipped to Amboy.

The polyethylene, which was first manufactured by Union Carbide in 1941, was shipped to Amboy in either pellet or granular form and was mostly white with some black pellets. Generally, polyethylene is used for the manufacture of film and molded or extruded articles.

The bis-phenol-A, which was first manufactured by Union Carbide in 1945, was shipped to Amboy in the form of white prills (spherical shapes) approximately 1/8" in diameter. Bis-phenol-A is used, generally, for the manufacture of epoxy, polycarbonate, polysulfone, phenoxy, phenolic resins, and as an antioxidant.

The polystyrene, which was first manufactured by Union Carbide in 1935, was shipped to Amboy generally in the form of white pellets. Polystyrene is generally used for the manufacture of film and molded or extruded articles.

The resins shipped to Amboy were manufactured in the following Union Carbide plants: polyvinyl chloride at Texas City, Texas; polyethylene at Texas City and Port Lavaca, Texas, Taft, La., and Ponce, Puerto Rico; bis-phenol-A at Ponce, Puerto Rico; and polystyrene at Bound Brook, New Jersey.

The amounts of each product shipped to Amboy from 1963-1974 are set forth in the attached schedule.

All four products were generally shipped to Amboy in large closed aluminum van boxes holding 35,000 to 50,000 lbs. of substance, although other forms of conveyance were used (see attached schedule). Each van had hatchways and openings closed by rubber gasketed bolted plates or blind flanges. The substances were repackaged into multiwall kraft paper bags containing 40-50 lbs. of resin; kraft paper drums containing approximately 200 lbs. of resin; paper board boxes containing approximately 1,000 lbs. of resin; covered railroad hopper cars holding 100,000 lbs. of resin; and covered special hopper cars holding 30,000 lbs. of resin.

Each van coming into Amboy containing the four substances was numbered, with identifying paperboard tags attached to the hatchway showing the type of substance contained and its manufacturing lot number. Material safety data sheets were transmitted to Amboy for each product. Each sheet includes a description of the product and its uses; its properties; the packaging and labeling used; a precautionary label, if any is necessary; shipping instructions, and testing methods. Following the implementation of OSHA vinyl chloride standards in April 1975, additional warning labels were used, if necessary.

None of the polyvinyl chlordie resins or other products shipped to Amboy by Union Carbide were toxic, for the reasons expressed in the defendant's experts' reports.. In addition, at the time of the plaintiffs' exposure to the polyvinyl chloride resins, the concentration of residual vinyl chloride monomer

emitted from the suspension resin was less than 1 ppm; from the solution resin the concentration was less than .001 ppm; and from the bulk resin the concentration was .017 ppm. Hence, the plaintiffs were not exposed to toxic concentrations of vinyl chloride monomer.

E. Union Carbide's Experience with Polyvinyl Chloride:

In the period 1947 to approximately 1960, vinyl chloride was regarded as a chemical with a relatively low degree of toxicity having a narcotic effect from which there was rapid recovery on discontinuation of exposure. Polyvinyl chloride resin was regarded as an inert nuisance dust and there was no particular concern about the small amounts of entrained unreacted monomer in the resin. The Union Carbide employees engaged in the manufacture of the resins had frequent physical examinations including a chest x-ray. The examination frequency varied from once a year to once every 3 years. These examinations have continued to the present date. At no time in the 30 years covered by this health surveillance has there been any evidence of harm to employees engaged in the manufacture of polyvinyl chloride or in shipping of the product. The only known harmful effects which have been elicited through on-going epidemiological investigation has been the appearance at the South Charleston plant of 5 cases of angiosarcoma of the liver all of whom had an initial exposure some time between 1941 and 1947 at which time heavy and prolonged exposure to vinyl chloride was a common event. The Texas City plant, which was a larger, more modern facility, commenced operations in 1947 and no vinyl chloride-related health problems have occurred.

About 1966 when an observation was made that a condition known as acroosteolysis might be related to exposures to

vinyl chloride monomer, Union Carbide joined with other manufacturers in sponsoring an investigation of this condition. The University of Michigan Institute of Environmental Health was retained as a consultant by an industrial group operating under the umbrella of the Manufacturing Chemists Association to conduct an epidemiological study of this disease. Following completion of the epidemiological study no acroosteolysis or associated syndromes were found in any Union Carbide employees. The reasons for this were considered to be the care exercised in preparing reactor vessels for reentry prior to instituting a cleaning operation and the provision of superior ventilation in the reactor vessel during the cleaning process. Notwithstanding the negative findings in the epidemiological study, Union Carbide developed new and improved methods of reactor cleaning to further reduce employee exposures. Union Carbide joined other manufacturers in investigations into the alleged carcinogenicity of vinyl chloride first suggested by Professor Viola who made the chance observation during an attempt to produce acroosteolysis in experimental animals. In addition to supporting experimental animal studies in carcinogenicity, Union Carbide participated in an epidemiological study of the polyvinyl chloride industry performed by Equitable Environmental Health, Inc.

In the early years of polyvinyl chloride manufacture, Union Carbide followed essentially the same practices as other manufacturers engaged in the same processing. In the period from roughly 1965 to 1970, which was a time when awareness of potential hazards of vinyl chloride monomer was becoming evident, Union Carbide was at least as good as the best in the industry in following appropriate safety practices in the manufacture and

shipment of polyvinyl chloride. This is evidenced primarily by the fact that there have been no cases of angiosarcoma of the liver in employees employed subsequent to 1950 and also by the absence of any cases of acroosteolysis in its total work force. Finally, with the definition of the relationship between vinyl chloride monomer and angiosarcoma of the liver and the vinyl chloride standard which derived from this relationship, Union Carbide rapidly achieved compliance with the OSHA standard and has met the labeling requirements of that standard in those activities where polyvinyl chloride was put in transportation.

F. The Decedent Eugene Maliko:[1]

Plaintiff Eugene Maliko was born on August 14, 1926. For approximately the first 26-27 years of his life he lived in Nesquchning, Pennsylvania. Through those years he was surrounded by companies such as Lehigh Navigation Coal Co., about 1 mile away, and strip mines, the closest one about 2 miles away.

At the age of 15, Mr. Maliko began working in the strip mines. At the age of 15 Mr. Maliko started smoking 1 1/2 packs of cigarettes daily, which he continued up to 1973. He smoked both filter and non-filter cigarettes. Until he was 21 years old he drove a truck and then he started working in the mines. He worked inside the mines for two years (1946-1947), setting blasting fuses and using vibrating tools. When fuses failed to

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[1] In this and the following discussions of the plaintiffs and their alleged injuries, the defendant does not stipulate to those injuries or to the testimony given by the plaintiffs. However, should those injuries and facts be established by the plaintiffs, it is intended by the defendant that the dates and facts referred to herein control the statute of limitations defense raised by the defendant.

go he had to crawl through the dust and fumes from blasts that did go off to reset the faulty fuses.

Mr. Maliko contracted black lung disease which made him "always" wheeze. The disease was diagnosed by Dr. Redilin in 1952 when he was 26 years old but he never received any treatment for it.

After leaving the mines in 1953 because of the black lung disease, Mr. Maliko had his own contracting business, installing roofs, redwood sidings, redwood porches and decks and occassional insulation. In addition and until he joined Amboy, Mr. Maliko had an odd assortment of part and full time jobs, including truck driving, crane operator, and assembly line work.

Mr. Maliko was employed by Amboy from January 9, 1967 to November 10, 1974. During his employment with Amboy, Mr. Maliko held several positions. For less than a year, Mr. Maliko was a utility man and, thereafter, he became a maintenance man which position he had for six years -- until he left Amboy in November, 1974. In that position he worked with material which was bagged in containers marked "Union Carbide."

Mr. Maliko stated that shortly after he began his employment with Amboy in 1967 he began to complain about conditions at the plant at every union meeting and about the health hazard of polyvinyl chloride. At the same time, in 1967, Mr. Maliko read newspaper articles and a book about the possible health hazards from the handling of polyvinyl chloride and phenols. Indeed, Mr. Maliko testified that, after reading several other articles, he continuously complained at union meetings, but that his co-workers and union members were not interested in the problem.

Mr. Maliko stated that as early as 1967-1968 he always went home sick with upset stomachs, vomiting, and nervousness. Additionally, Mr. Maliko experienced a burning sensation in his eyes, lips, face, nostrils and skin. Sometime in 1972 or 1973, Mr. Maliko began to experience difficulty breathing and he started to cough all day.

Mr. Maliko first sought medical attention in 1973 because of discomfort in his chest and difficulty in breathing. In the Spring of 1974, Mr. Maliko began to experience serious weight loss, so much so that his fellow workers remarked about it to him but he never checked with a doctor about it. Mr. Maliko testified that he first became aware of his alleged cancerous condition in February of 1974. In November of 1974, Mr. Maliko underwent a permanent colostomy to remove an alleged cancerous condition of the rectum; in November of 1975, he allegedly had a heart attack for which he was hospitalized; and in July of 1977, he had surgery performed on his left kidney. Mr. Maliko died in 1979.

G. Arthur Schaffer:

Plaintiff Arthur Schaffer was born on October 15, 1928 in Wilkes Barre, Pennsylvania. Mr. Schaffer moved to Jersey City, New Jersey when he was 16 years old. He has remained in the New York metropolitan area since that time. Prior to joining Amboy, Mr. Schaffer had an assortment of jobs including beer bottle washing, driving fork lifts on docks and book salesman.

From the age of 17 Mr. Schaffer has smoked 1 1/2 packs of cigarettes daily. He has a "history of ethanolism" and states

that he drinks 28 cans of beer and 1/2 to 1 pint of whiskey weekly.

Mr. Schaffer started working for Amboy in June, 1961 and continued there until May 2, 1974. When Mr. Schaffer first began at Amboy he unloaded large bags of polyvinyl chloride, polypropylene and polyethylene from Sea-Land vans for 6 months. The bags bore the name of "Union Carbide." Then, for approximately 12 years, he packaged these substances into smaller containers.

Mr. Schaffer stated that after beginning with Amboy in 1961 he "was always sick." As soon as he began working on the bagging line he had headaches, backaches, nausea and coughing. He also stated that around 1970 his symptoms exceedingly worsened. Mr. Schaffer began to regurgitate blood and the pain in his back began to throb. He also had shortness of breath and difficulty breathing.

In July of 1973, Mr. Schaffer learned that he had fluid on his right lung. No cancer was found. In answer to Carbide's Interrogatory 11(b), Mr. Schaffer stated that he knew the seriousness of his illness on July 9, 1973.

Beginning approximately in 1968, Mr. Schaffer complained to plant managers and the Union about the working conditions. Thereafter, he continually complained at union meetings and to his supervisors about the hazards of the polyvinyl chloride in powder form. Mr. Schaffer testified that he first became aware of the possible dangers from handling polyvinyl chloride when he read certain newspaper articles in the "Perth Amboy Evening News" in the summer of 1973. Mr. Schaffer stated that he assumed the alleged causal relation between the substances to which he was

exposed and his physical complaints when he became ill and was hospitalized in 1973. In fact, Mr. Schaffer testified that his doctors alerted him about his occupation and told him that the products with which he was working would do him no good.

H. Harry Wilkinson:

Plaintiff Harry Wilkinson was born December 19, 1918. He had a wide variety of trucking jobs before his employment with Amboy. Mr. Wilkinson smoked one to two packs of cigar tte daily from age 19 until 1970. He drinks 2 shots of alcohol daily.

Plaintiff Harry Wilkinson was employed by Amboy in September of 1962 until December of 1966. At various times in his employment at Amboy, he was a utility man and packager or bagger. In 1965, soon after he became a bagger, Mr. Wilkinson began complaining to Amboy and his union about working with the various substances. He complained about "headaches, nausea, sickness in [his] stomach, losing [his] voice, getting sore throats." He began to expectorate phlegm in 1964 which worsened after he left Amboy, in 1967, and again in 1969. On July 3, 1970, Mr. Wilkinson was told he had cancer of the larynx. On July 5, 1970 he had a tracheotomy, followed by treatments until September 27, 1970 at which time his larynx was removed. He further believes that he was also diagnosed for emphysema, fibrosis and conjuctivitis in 1970 (although he had watery and red eyes as soon as he began to work at Amboy in 1962). He was diagnosed with diabetes and a heart condition in 1974.

Mr. Wilkinson testified to having seen the Union Carbide name on the bags used for packaging polyvinyl chloride, polyethylene, and polystyrene. He had read about the possible harmful

effects from working around "plastic" "products" in 1970 while he was hospitalized. And in response to Carbide's Interrogatory 47, Mr. Wilkinson answered that he "never realized the danger until [he] read articles" in the newspaper (in his deposition testimony he stated it was in a book) in July of 1970.

I. The decedent Henry Mazanowski

The decedent Henry Mazanowski was born April 4, 1924. He smoked at least 5 cigaretts daily for approximately 20 years. He was also a light drinker.

Plaintiff Janet Mazanowski is the widow of the decedent Henry Mazanowski and the Administratrix ad Prosequendum and Administratrix of his Estate. Mr. Mazanowski was employed as a packager by Amboy from November 1966 until his death in January, 1974. Prior to joining Amboy, the decedent spent 1 year as a grinder for a ceramics firm, 1 1/2 years as a punch press operator for a metal company and almost 4 years as a precious metals operator for I. E. DuPont de Neumours.

Mrs. Mazanowski testified that from the time Mr. Mazanowski started working at Amboy in 1966, he complained of difficulty in breathing, coughing, constant rashes, blisters, and itching, sneezing, vomiting, the urge to expectorate and constant pain in his upper back whenever he had to bag the polyvinyl chloride powder. The coughing, expectorating of phlegm, and difficulty in breathing all increased with the pain in his back and worsened after 1972.

Indeed, all of his complaints intensified between October 1972 and March, 1973. Additionally, during that same period,

he experienced drastic weight loss of approximately 25 to 4(pounds, and continued to lose weight thereafter.

Beginning in October, 1972, Mr. Mazanowski saw numerous physicians. On April 3, 1973, a cancerous growth was removed from his left arm, after which time he received extensive treatment for cancer. Mr. Mazanowski passed away on January 23, 1974.

Mrs. Mazanowski testified that she "knew" his symptoms were caused by the polyvinyl-chloride powder that he was packaging at Amboy. She also testified that Mr. Mazanowski knew that he was packaging polyvinyl chloride and other substances. Mrs. Mazanowski recalled that Mr. Mazanowski had complained to Amboy that the "working conditions were dusty, dirty and detrimental to his health . . ." and that he also complained to his union. She also stated that it was once mentioned to Mr. Mazanowski that his illness could possibly be related to something he was working with. That conversation, of course, would have to have occurred prior to his death in January of 1974.