

UNION CARBIDE CORPORATION CHRONOLOGY OF VC/PVC ACTIVITIES

- 1928 Started pilot plant production of vinyl chloride monomer and development of resins made from vinyl chloride - South Charleston, West Virginia.
- 1933 Commercial production of vinyl chloride by alkali dehydrochlorination of ethylene dichloride and the manufacture of vinyl chloride resins by the solution polymerization process - South Charleston, West Virginia.
- 1936 Expanded solution polymerization resin plant - South Charleston, West Virginia.
- 1937 Commercial production of vinyl chloride resins by continuous bulk polymerization - South Charleston, West Virginia.
- 1937 Chemical Hygiene Fellowship under Dr. H. F. Smyth established at Mellon Institute of Research at Pittsburgh, Pennsylvania.
- 1940 Studies of skin sensitization by PVC resins and compounds initiated at Mellon Institute of Research by Dr. H. F. Smyth.
- 1941 Initiated production of vinyl chloride by thermal dehydrochlorination of ethylene dichloride - South Charleston.
- 1942 Initiated production of vinyl chloride by synthesis process using acetylene and hydrogen chloride.
- 1943 Built new continuous bulk polymerization plant for vinyl resins - South Charleston, West Virginia.
- 1943 Built new emulsion polymerization plant for vinyl resins. - South Charleston, West Virginia.
- 1945 Built new facility for manufacture of synthetic fiber from vinyl chloride and acrylonitrile - South Charleston, West Virginia.
- 1946 Built new vinyl chloride monomer plant, a solution polymerization resin plant and a continuous bulk polymerization resin plant in Texas City, Texas.
- 1947 Discontinued manufacture of vinyl chloride by caustic dehydrochlorination of ethylene dichloride and manufacture of bulk polymerized resins at South Charleston, West Virginia.
- 1947 Smyth, H. F., Jr. and Weil, C. S. reported on work at Mellon Institute "Chronic Oral Toxicity to Rats of Vinyl Chloride - Vinyl Acetate Copolymer", Toxicology and Applied Pharmacology 9, 501-504, 1966.

- 1954 Expanded solution polymerization plant for resins in Texas City.
- 1955 Initiated manufacture of vinyl resins by the suspension resin process at South Charleston, West Virginia.
- 1957 Converted the emulsion polymerization plant to a dispersion resin plant at South Charleston, West Virginia.
- 1960 Expanded the solution polymerization plant at Texas City, Texas.
- 1961 Perth Amboy Bulk Terminal started operation under OTD management.
- 1962 Initiated manufacture of vinyl resins by the suspension resin process at Texas City, Texas under technology license from Wacker Chemie.
- 1965 Expanded the suspension vinyl resin plant at Texas City, Texas, reduced capacity for bulk resins by fifty percent at Texas City, Texas and discontinued manufacture of suspension vinyl resins at South Charleston, West Virginia.
- 1966 Union Carbide Corporation representatives met with the Manufacturing Chemists Association to discuss reported acroosteolysis at the B. F. Goodrich Chemical Company plants. Support for an epidemiological study was pledged by Union Carbide Corporation.
- 1967 Discontinued manufacture of vinyl chloride at South Charleston, West Virginia.
- 1968 Expanded the suspension vinyl resin plant at Texas City, Texas.
- 1968 An employee of Union Carbide Corporation at South Charleston, West Virginia plant dispersion PVC unit died of liver cancer, subsequently diagnosed as angiosarcoma of the liver, a rare type of cancer.
- 1969 Discontinued manufacture of vinyl chloride at Texas City, Texas.
- 1969 The epidemiological investigation of the PVC industry co-sponsored through MCA by Union Carbide Corporation showed no confirmed cases of acroosteolysis in any Union Carbide Corporation polymerization plants.
- 1971 Union Carbide Corporation co-sponsored a visit to the U.S.A. by Dr. P. L. Viola to discuss his reported oncogenic effect of vinyl chloride exposure to rats with the Manufacturing Chemists Association Occupational Health Committee.

- 1971 An Ad Hoc Planning Group for Vinyl Chloride Research was formed in MCA under the chairmanship of Mr. R. N. Wheeler, Jr., of Union Carbide Corporation. The Group recommended chronic toxicity studies, a metabolism study and an epidemiological study of the effects of vinyl chloride at an estimated cost of \$350,000.
- 1972 Union Carbide Corporation agreed to co-sponsor the chronic toxicity and other studies proposed by MCA.
- 1973 Union Carbide Corporation representative, Mr. R. N. Wheeler, along with representatives of MCA, Dow, Ethyl and Imperial Chemical Industries met with Dr. M. Key and Associates of the National Institute for Occupational Safety and Health to discuss the status of the possible vinyl chloride chronic toxicity problem.
- 1974 Union Carbide Corporation supplied the National Institute for Occupational Safety and Health and the Occupational Safety and Health Administration with written testimony and free access to its plants using vinyl chloride. It also reported promptly the second death of an employee from angiosarcoma of the liver.
- Union Carbide Corporation through Organization Resources Counselors co-sponsored an epidemiological study of the PVC fabricating industry as well as provided access to its records for the study.
- 1975 Union Carbide Corporation complied with the Occupational Safety and Health Administration's Standard for Vinyl Chloride.
- 1976 Discontinued the manufacture of vinyl chloride copolymer fiber and dispersion vinyl resins at South Charleston, West Virginia.
- 1977 Discontinued the manufacture of suspension and bulk process vinyl chloride resins at Texas City, Texas.
- 1981 Union Carbide Corporation through Chemical Manufacturers Association co-sponsored an epidemiological study of workers in the vinyl chloride-polyvinyl chloride industry. Study in progress.
- 1982 Discontinued the manufacture of solution polymerized vinyl chloride resins at South Charleston, W. Va.