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Alfred A. Levinson, Esq.
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Re: Maliko, et als. v. Union Carbide Corporation

Dear Mr. Levinson:

The Defendant Union Carbide Corporation hereby provides more specific answers to the Plaintiffs' Supplemental Interrogatories numbered 20, 26, 32 and 45. You may accept these answers as though fully certified.

20.

The Fundamentals of Industrial Hygiene, published in 1971 by the National Safety Council, defines airborne dust as solid particles with a diameter of 25 microns or less. This is the item controlled by the OSHA nuisance dust regulation to 15 milligrams per cubic meter.

Respirable dust is that portion of airborne dust whose particles are significantly less than 10 microns in diameter. Respirable dust is so named because it is not filtered out of the air by the human body's protective filtration system when the air is inhaled. There is no sharply defined particle size that is respirable; i.e., at 5 micron particle size the dust is 25% respirable, at 3.5 microns the dust is 50% respirable and so on. Respirable dust is limited by OSHA to 5 milligrams per cubic meter.

Analysis of resin particle size is of note:

	Particles Available for Airborne Dust (%)	Particles Available for Respirable Dust (%)
UCC Solution Resin	5	Nil
UCC Bulk Process Resin	4	0.4
UCC Suspension Process Resin	0.4	Nil

In order for a person to be harmed by breathing dust particles, they must be made available for breathing via aeration. Nuisance dust measurements on a packaging operation at Union Carbide Corporation for solution resin were < 1 milligram/cubic meter total airborne dust. No measurements of respirable dust were necessary. These are well below the OSHA limit.

Based on the facts that the U.C.C. PVC resins handled contained very little material of respirable dust size and that the PVC resins handled were nontoxic, there is no reason to believe there was any inherent danger from breathing small amounts of airborne dust containing the resins. This does not mean, however, that one should not make use of dust respirators in doing work where considerable airborne dust of any kind is generated.

26.

The conclusions drawn by Union Carbide upon receipt of the papers on the list of References and Other Data Sources are discussed in the expert report of R.N. Wheeler, Jr., entitled "Literature Survey & Engineering Opinions," with particular reference to the section therein on Vinyl Chloride Toxicology.

32.

The threshold limit value for a gas or vapor is the concentration of the gas or vapor in the workspace air below which the American Congress of Governmental Industrial Hygienists and/or the Occupational Safety and Health Administration believes a worker will suffer no ill effects when exposed to the gas or vapor for long periods. The threshold limit value is usually expressed as parts per million or as milligrams per cubic meter.

Threshold limit values are not set on gases or vapors contained in a solid or liquid since the relationship between human health and the composition of a solid or liquid cannot be clearly established.

Vinyl chloride monomer is a gas at ambient temperatures and pressures. Thus in a closed static system consisting of resin solids, vinyl chloride and air, VCM will tend to move from the air to the solid resin or to move from the resin solid to the air until a state of equilibrium exists between the vinyl chloride concentration in the air and the vinyl chloride concentration in the resin solid. The time required to reach this state of equilibrium is dependent on the system temperature, the resin composition, the resin particle size, the resin particle porosity and the system pressure.