PLAINTIFF'S EXHIBIT

UC-2517

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Carbide 7/14/77 letter to CPSC and Data from Drywall Repair Job

Data from an interested party, as was data sent in earlier by AIA. No attempt is made to square this data with values reported by Rohl et al. in the scientific literature Rohl paper had to go through peer review prior to publication.

Use of optical microscopy outdoors and in the home is inappropriate for the determination of background asbestos levels; yet even with this coarse method, the report shows higher asbestos levels inside the house than outside.

There was nothing "natural" about the asbestos levels inside the house, and the use of this term in the cover letter (and the description of the house as a "typical residence" is misleading, to put it kindly. The house had had a drywall job in 1960 and a bathroom renovation in 1975 with extensive use of asbestos-containing patching compounds in both cases and sawing/drilling of asbestos-cement sheeting in the latter job to fashion bathtub enclosures. A gas log with asbestos was installed in 1968.

Operator and area samples were taken during the mixing of the powder with water, but the operator's exposure during this 17-minute step is not reported. It appears to have been included in one of the 8-hour TWA's reported on page 11. What was the exposure during the mixing step itself?

TWA's for sanding step on the 2 days when sanding was done were both computed on the basis of the consumer leaving the house for the day as soon as the job was finished. Had time-averaged exposures been calculated on the basis of the consumer staying in the house, values several times as high as those reported in the cover letter would have resulted. This kind of nonsense could never get published in a scientific journal.

Carbide's claim that "there was not a multiplicity of short or narrow fibers that were missed by (optical)methods" was not supported by data. They seem to have chosen a method of electron microscopy that has the best chance of supporting their claim, however. The method is totally new, and no standard methods were used as back-up to assure accuracy. Other criticisms:

a. scanning electron microscopy can be used to a magnification of 15,000x, they say, yet they only scanned one (undescribed except by number K-30, what was this a sample of?) at that power. Their method for SEM analysis appears to be used only in the 1500-2000x range, only several times more powerful than the limit for an optical microscope. Why not 15,000x?

b. The SEM technique used makes the Millipore filter into a thin film before scanning for fibers. Fibers caught inside the Millipore filter would wind up in the interior of this film, and might be hidden from view from SEM, a surface technique that only "sees" the 1-micron-thick layer of surface. As a result, this method is prone to undercounting, especially for small fibers.

c. Millipore filter material is easily damaged by electron beams, swelling of the film could impede analysis. In contrast, Nuclepore filters are not so affected. The samples could have been transferred to Nuclepore filters, with deposition of the asbestos fibers entirely on the filter surface.

d. Low-temperature ashing would also have removed Millipore filter remains, yet no mention of the use of ashing appeared in the report.

A 10127

Union Carbide trial exhibit UC-2517: Barry I. Castleman, Critique of Carbide's 7/14/77 Letter to CPSC and Its Drywa... Published by AsbestosClaims.Law
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In contrast to the remarks of Carbide, Rohl et al. found an abundance of submicroscopic fibers in air samples that could only be seen with electron microscopy. These researchers, who are pioneers in the field of asbestos analysis, used the proven technique of transmission electron microscopy, at a magnification of 25,000x. They found 200 to 1,000 asbestos fibers by TEM for each fiber counted by optical microscopy. It is necessary to take this into account when looking over Carbide's data. Carbide reported 300,000 large fibers per cubic meter of air for 8-hour sampling average. From the Mt. Sinai paper, we know that this implies that there were a total of 6 million to 30 million asbestos fibers per cubic meter of air. And the average person breathes about 1 cubic meter per hour. These amounts of asbestos are certainly not normal background levels for the home, as Carbide maintained.

> When Carbide or its commercial customers for asbestos fiber make a product that does not expose consumers to asbestos levels above normal background, I would agree that there is no basis for banning the product as a consumer hazard. But this is not such a product.

It is not mentioned whether the product used from US Gypsum is made with asbestos from Union Carbide's mines. I understand that Carbide's asbestos is fiber of unusually small dimensions, and if this is the fiber in the product, it would be especially difficult to get meaningful measures of exposure with optical microscopy. The product was made in 1974 and took 3 years to reach the consumer, I note. Was USG a customer for Carbide asbestos in 1973-74?

The drywall job was reportedly done by a "typical consumer". Was this person an employee of Union Carbide? Was he told that breathing asbestos might pose a cancer or other health risk just before starting the job? Was he advised to keep the dust down to protect himself and his family? Did he wear a respirator while doing the job? Was the purpose for Union Carbide taking samples during the job made known to the consumer? Might a special awareness of the hazards and the understanding of Carbide's hoped-for results from the test perhaps have led this person to do an especially clean job, especially with all the sampling gear around the house to serve as a reminder?

Highest exposure reported was that of the person who washed the work clothes. This (500,000 large fibers/cu. m.) shows one way that risk is transmitted to members of the consumer's family.

The use of fiber-shaped substitutes for asbestos is not necessary, as some products on the market for years have not had fibrous ingredients. Non-fibrogenic, non-carcinogenic formulations already exist. Moreover, the concern over fibrous clays is primarily a result of their impending substitution for asbestos, not a result of documented health effects that are caused by these substances. It is unlikely that any substitute for asbestos now being considered will rival it as a health hazard to man.

Carbide asked the Commission for a 1% limit on asbestos in drywall patching compounds. However, no data was supplied on the extent of asbestos exposure that such products would entail. Moreover, no reason is offered for why the Commission should deem compounds with more than 1% asbestos an unacceptable hazard, yet allow 1% compounds. I would expect the risk to consumers to be of the same order of magnitude from 1% asbestos specks as from existing asbestos-containing spackling compounds.

Carbide's other request to the Commission was to [illegible] labels on all such compounds, "whether packaged for consumer or commercial use". However, sellers of these products would provide some sort of euphemistic hazard labeling if only to protect themselves against product liability suits.

A 1% limit would enable manufacturers to work off existing stocks with [illegible]

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Outline of Statement to CPSC on Asbestos

1. History of asbestos product hazards, leading to product liability suits

early recognition of hazards by the ancients, insurance firms; medical reps.

consumers also endangered by insulation -- basement pipes; EPA bans

secretary in plant that sawed asbestos panels in '40s; new Grant-W dealer brochure,

historic failure of industry to control hazards led to massive public health disasters that would never have occurred if industry had behaved responsibly in the 1930's

Gillenwater notes - plant hazards known since 1930; failure to protect plant workers and conduct studies led to widespread dispersion of asbestos products in buildings and consumer products

some products: sprayed fireproofing insulation (1958-1973) -- asbestosis showing up now among workers, manufacturers vanished; Yale, Lander, UCLA, NJ schools - a mess to remove or seal and demolition will be a problem later.

drywall compounds, texture paints, flooring backings, fake ash and logs, children's modeling compounds, tobacco and cigarette filters, intravenous drug filters and filters for beverages of all kinds

epidemics: WW II shipyards (total employed 4.5 million); Groton, Kearney sprayed insulation building trades workers (millions of workers at time of ban in construction); public, too

drywall workers, brake mechanics; maybe tell booth operato

workers' family members; factory and shipyard neighbors

2. Product liability suits from consumer-workers and their families

(ordinary-consumer disease will mostly pass unrecognized as such, unprovable)

4-M 10-K form/hundreds of multimillion dollar claims

Asbestos disease compensation bill -- S 205

Asbestos industry (AIA, 4-H absent at hearing) concedes that drywall patching compounds should be made without asbestos -- but not Union Carbide

3. Carbide, whose lawyers are not tied up in product liability litigation yet, seems to still be at the stage of fighting to retain each and every market for asbestos. Carbide also spends money on finding new uses for the asbestos from its California mines (e.g., paint patents) — Critique of Carbide defs. A 10129

What does Carbide stand to gain, and what is the public health risk of Carbide request to roll it compounds is granted by CPSC?

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