PLAINTIFF'S
EXHIBIT
FD-199

PRESENT THRESHOLD LIMIT VALUE IN THE U.S.A. FOR ASBESTOS DUST: A CRITIQUE

E. L. Schall

Occupational Health Program, New Jersey State Department of Health Trenton, N. J.

The present threshold limit value for asbestos dust in the U.S.A. is 5.0 millions of particles per cubic foot of air for a daily eight-hour exposure, 40 hours per week. This value was adopted many years ago by the American Conference of Governmental Industrial Hygienists and reaffirmed at the annual meeting in April, 1964.[1] It refers to airborne concentrations of asbestos dust which represent conditions under which it is believed that nearly all workers may be repeatedly exposed without adverse affect. However, threshold limits should be used as guides in the control of health hazards and should not be regarded as fine lines between safe and dangerous concentrations. These limits are based on the best available information from industrial experience, from experimental human and animal studies, and when possible, from a combination of the three.

Referring to the *Documentation of Threshold Limit Values* published by the American Conference of Governmental Industrial Hygienists[1] we learn that the basis for the threshold limit value of five mppcf for asbestos dust results from studies conducted by Miller and Sayers which showed that intraperitoneal injection of amosite, chrysotile and crocidolite in guinea pigs produced the reaction of an inert dust.[2] Vorwald, Durkan, and Pratt confirmed this for short fibers (under three microns) but observed that long fibers produced a fibrous reaction.[3] Continuing unpublished work by Gardner, these workers demonstrated that long fibers (20 microns and above) produced peribronchiolar fibrosis in lower animals, and developed evidence that this resulted from mechanical rather than chemical action.

That exposure to asbestos is associated with development of a potentially disabling pneumoconiosis in man has been amply demonstrated by industrial experience. The present threshold limit relates to the prevention of asbestosis. It was recommended by Dreessen, Dalla Valle, Edwards, Miller, and Sayers after study of dust encountered in three asbestos textile plants using chrysotile. Only three doubtful cases of pneumoconiosis were found in those exposed to dust concentrations under five mppcf, whereas numerous well-marked cases were found above five mppcf. Counts were from impinger-collected samples in ethyl alcohol and distilled water. Both fibrous and nonfibrous particles were counted, but the latter greatly predominated. While chemical analyses of collected samples of airborne dust corresponded to those of settled dust samples, it is believed that dust counts of particulates by conventional methods can be expected to give only an indirect

measure of the
of long fibers.
When consid
is pertinent to
tile industry w
the beginning
be given to oth
bestos dust exc
The study wa
is used in man
of plant has no
grades, sizes ar
tilation system
environmental
the time of th
to use chrysotil
poses. That wa
nadian Asbesto
Again on page
asbestos used i
per cent comes
Russian and Au
In textile wo
fibers as well as
The asbestos
American. This
textile plants. P
from American
countries but i
more generally
ize in the produ
practice." If th
today, we would
ish factories. W
is made, it sug
Page 7 states
tos textiles proc
tion could be m
It is believed
piece and objec
brated was emp
as mentioned in
Dalla Valle, Th

8000 1028

PQ

8032

PRODUCED BY FORD