

CHEMICALS
RESEARCH

JUN 13 1974

Interoffice Communication

To Distribution

From J. F. Gabbett

Date June 13, 1974

Subject Notes on Allowable Levels of Cancer-Suspect Chemicals. Occupational Safety and Health Standards - 14 Carcinogens

The following is taken from the work standards published in the Federal Register on January 29, 1974 for 14 carcinogenic materials. This standard will be used as a precedent by some companies presenting their case before OSHA on June 25th. It would probably be of more value if the vinyl chloride standard to be issued in October is legally challenged.

Extrapolation of results obtained by animal experimentation is alleged to be vitiated by several considerations: A) That certain cancers are specific only to some species; B) That the conditions of animal experiments are out of proportion to, and not consistent with, conditions prevailing in industrial exposure; and C) That no cancers have yet been detected in humans exposed to the substances. (This does not, however, seem to be the case with PVC). The objections submitted raised the issue of human exposure to a chemical which has only known to have caused cancers in experimental animals. NIOSH and others considered it improper to afford less protection to workers when exposed to substances found to be carcinogenic only in experimental animals. Once the carcinogenicity of a substance has been demonstrated in animal experiments, the practical regulatory alternatives are to consider them either non-carcinogenic or carcinogenic to humans, until evidence to the contrary is produced. The first alternative would logically require, not relaxed controls on exposure, but exclusion from regulation. The other alternative logically leads to the treatment of a substance as if it was known to be carcinogenic in man. The second alternative is the responsible and correct one, therefore, any exposure to any amount of a carcinogenic substance must be prevented. Accordingly a standard of zero tolerance permitting no exposure what-so-ever was proposed. This objective would be accomplished by means of a permit system and frequent monitoring and reporting.

OSHA agreed that a safe level of human exposure to any of the 14 carcinogens could not be established by application of present knowledge. But they were not prepared to draw from this state of knowledge the conclusion that such levels do not exist. In other words, yet undetermined safe levels of exposure possibly do exist. Below a certain amount of a single or accumulative dosage, no detectable harm is caused, or if harm is caused, the extent of such harm will be of no practiceable importance because the latency period prior to manifestation of harmful effects will be of greater duration than the normal life span of the man. Exposure to some amounts may occur because of breakdown of equipment or human error.

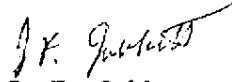
WFO 0002006735

June 13, 1974
Page Two

A permit system proposed on July 16, 1973 was also objected to by OSHA. With regard to feasibility, it was pointed out that a multitude of permits would be required, and that therefore the implementation of a permit system would require substantial resources and several years.

In summary then, the decision was made not to adopt a permit system, and to allow limited exposure to the 14 carcinogenic materials. The exposure level as it exists today permits the use of solid or liquid mixtures containing less than 1/10 of one percent or one percent depending upon the particular chemical.

The controversy with regard to signs and labels centered on whether the word cancer should be used. OSHA contended that a deluded form of warning would not suffice. OSHA also ruled that a requirement to wash on each exit, and shower at the end of the day would not offer significant protection to employees because volatile materials would have a short residence time. With regard to the use of a full impervious air supplied suit; such would be cumbersome. Impervious garments with air supplied hoods would be more comfortable and adequate when used in accordance with the work practice.


J. F. Gabbett

mj

Distribution: K. L. Schurter, J. J. Langford, L. N. Vernon, J. D. Burns,
F. Kennedy, D. Porchey, W. R. Sorenson