

PROPOSED OSHA ASBESTOS STANDARD

October 9, 1975

PLAINTIFF'S EXHIBIT

MAR-132

On October 9, 1975, a new proposed OSHA asbestos standard was published in the Federal Register. The proposed standard has stricter requirements than the present OSHA standard. A summary of the proposed standard follows.

1. The Construction Industry is excluded.
2. Applies to all locations where asbestos or products containing asbestos is manufactured, processed, packaged, stored, applied, used or otherwise handled.
3. The allowable eight-hour time-weighted average concentration is 0.5 fibers/cc and the allowable ceiling concentration is 5 fibers/cc. (The present standard calls for a 2.0 fiber/cc average and 10 fiber/cc ceiling effective on 7-1-75.)
4. Regulated areas must be established where the allowable concentrations are exceeded.
 - a. Only authorized employees may enter area.
 - b. A daily roster of all persons entering the area must be maintained.
 - c. Respirators and respirator programs are required.
 - d. Employees must be allowed to leave the area to wash their face and clean their respirator.
 - e. No eating, drinking, smoking or chewing is allowed in the area.
 - f. Change rooms are required with separate lockers, showers, etc.
 - g. Employees must be provided daily with clean and dry protective clothing to include coveralls, head covering, gloves and foot covering.
5. Monitoring is required in all exposure areas.
 - a. Monthly if greater than the allowance exposure.
 - b. Quarterly if within the allowable exposure.
 - c. Can be discontinued if two consecutive samples within a certain time frame are within the allowable levels.
 - d. Not every employee need be monitored.
 - e. Required after every process change.

6. Engineering controls are required to reduce the exposure, even if they won't result in asbestos levels within the allowable limits. Periodic exhaust system checks are required.
7. A medical control program with preplacement, annual and termination exams is required.
 - a. X-rays, pulmonary function tests, sputum cytology and medical history are included.
 - b. There are provisions made for an employee's refusal to take the examination.
8. A compliance program must be developed and made available, on request, to OSHA. The program must be revised and updated every six months.
9. Employees whom the doctor says cannot function normally while using a respirator shall be, to the maximum extent possible:
 - a. Rotated to another job.
 - b. Given the opportunity to transfer to another job, subject to the following requirements:
 - i. Duties he can perform.
 - ii. Same employer.
 - iii. Same geographical area.
 - iv. Same seniority, status and rate of pay.
10. Danger signs and labels, housekeeping and waste disposal provisions are included.
11. Extensive recordkeeping requirements are included with respect to asbestos monitoring and medical examinations. Monitoring records must be made available to employees upon request. Medical records must be made available to employees' doctors upon request. All records must be made available to OSHA upon request. Records must be maintained for 40 years or an employee's employment interval plus 20 years, whichever is longer.
12. Employee training programs, both preplacement and annual, are required. The programs are to include the how and why of operating procedures, medical examinations, etc. Employees are to have access to the asbestos standard and training materials.

Recommended Procedures For Brake and Clutch Servicing

Because studies have indicated that exposure to excessive amounts of asbestos dust may be a potential health hazard, OSHA has set maximum limits on levels of airborne asbestos dust to which workers may be exposed. Since most automotive friction materials normally contain a sizeable amount of asbestos, it is important that people who handle brake linings and clutch facings understand the nature of the problem and know the precautions to be taken.

1. Areas where brake and clutch work are done should be set aside if possible, and entrances should be posted with an asbestos exposure sign as follows:

Asbestos
Dust Hazard
Avoid Breathing Dust
Wear Assigned Protective Equipment
Do Not Remain in Area Unless Your Work Requires It
Breathing Asbestos Dust May Cause Asbestosis and Cancer

2. The amount of asbestos in the dust from brake lining wear is normally at an extremely low level because of chemical breakdown during use, and if machining of friction material does not take place, simple procedures will minimize exposure. During brake servicing, the mechanic should wear an air purifying respirator, either a throwaway or one with replaceable particulate filter(s), as approved by the Mining Enforcement and Safety Administration or NIOSH. It should be worn during all procedures starting with the removal of the wheels and including reassembly. When servicing a manual clutch such a respirator should be worn during removal and cleaning of the clutch, pressure plate and housing assembly and during installation of the new clutch assembly.

3. During disassembly, all parts should be carefully placed on the floor to minimize the possibility of creating airborne dust. Dust should first be cleaned from brake drums, brake backing plates, brake assemblies and clutch assemblies using an industrial type vacuum cleaner equipped with a high efficiency filter system. After vacuum cleaning, any remaining dust should be removed by using a rag soaked in water and wrung until nearly dry. Under no circumstances should compressed air or dry brushing be used for cleaning.
4. Of extreme importance are the precautions which must be taken during machining of friction material. This is the operation in brake servicing when exposure to asbestos dust is at its highest. In addition to the approved respirator, there must be local exhaust ventilation such that the worker exposures are maintained at least below the 1976 OSHA asbestos standards. If there is any question as to the efficiency of asbestos dust removal by the machine, the manufacturer should be contacted.
5. Industrial vacuum cleaner bags containing asbestos dust and cloths used for wiping brake and clutch assemblies should be sealed in plastic bags and labeled with the following warning label printed in letters of sufficient size and contrast to be readily visible and legible:

Caution
Contains Asbestos Fibers
Avoid Breathing Dust
Breathing Asbestos Dust May Cause Asbestosis and Cancer

All asbestos waste should be disposed of in accordance with the OSHA asbestos regulation. During removal of vacuum bags, an approved respirator, as described in (2) above should be worn.

6. All floor cleaning in areas where brakes and clutches are repaired should be done with the high efficiency industrial vacuum cleaner as described in (3) above. Under no circumstances should sweeping take place. Grinding (arcing) machines should also be cleaned with such a vacuum cleaner and any remaining dust wiped with a damp cloth. An approved respirator, as described previously should be used during this cleaning.
7. Although adherence to the above procedures should minimize any contamination of work clothing, it is necessary that the appropriate sections of the OSHA regulations on asbestos be followed when ceiling levels on asbestos dust exceed current standards. This could involve special clothing, change rooms, etc. At the very least the work clothes should not be taken home but should remain at work for industrial laundering.
8. Proper hygiene practices will help minimize exposure to asbestos dust. Wash thoroughly before eating and do not eat in the work area. Remember, smoking is harmful to the health, and smoking coupled with breathing asbestos dust is extremely dangerous.

CAUTION DO NOT BREATHE ASBESTOS DUST

centration or dose, was linear on a logarithmic scale. The equivalent concentrations and doses of benzene that produced the same inversion of the chronaxis of the antagonistic muscles were found to be 240 mg/cu m and 16,000 mg/l; 120 mg/cu m and 8000 mg/l; 60 mg/cu m and 4000 mg/l; 30 mg/cu m and 2000 mg/l, and 15 mg/cu m and 1000 mg/l. Reduced blood cholinesterase activity, and reduction of the leukocyte, erythrocyte and hemoglobin levels were among the principal symptoms of benzene poisoning. The potentiation of the effects of high doses and concentrations of benzene, and the summation effect for lower doses and concentrations were determined.

42915 APTIC NO. 66240

Chow, C. K., C. J. Dillard, and A. L. Tappel

GLUTATHIONE PEROXIDASE SYSTEM AND
LYSOZYME IN RATS EXPOSED TO OZONE OR
NITROGEN DIOXIDE. *Environ. Res.*, 7(3):311-319, June 1974. 30 refs.

Exposure to rats to low concentrations of ozone (as low as 0.2 ppm) continuously for 8 days, or intermittently (8 hr/day) for 7 days, significantly increased the activities of the glutathione (GSH) peroxidase system in lung tissue. Linear regression analysis showed the increased enzymic activities to be a function of ozone concentration. Lysozyme activity was significantly increased in lung soluble and plasma, during continuous, but not intermittent, O₃ exposure. The results indicated that lipid peroxidation damage occurred in lungs of rats exposed to relatively high levels of O₃. Rats were exposed to relatively higher levels of nitrogen dioxide for 4 days. The activities of GSH reductase and glucose-6-phosphate dehydrogenase were significantly increased during exposure to 2.3 ppm and 6.2 ppm of NO₂, respectively. There was no significant increase in the activity of GSH peroxidase in lung soluble, or of lysozyme in the plasma, during exposure to NO₂. The results suggest that the mechanism of action of NO₂ is different from that of O₃. (Author abstract)

42916 APTIC NO. 66438

Dingeon, M. and Collombel

EVALUATION OF THE NUISANCES CAUSED BY
ASBESTOS: ASBESTOS USED IN AUTOMOBILES.

(Evaluation des nuisances provoquées par l'amiante: cas de l'amiante automobile). Text in French. *Pollut. Atmos. (Paris)*, 16(62):183-190, April-June 1974. 28 refs.

Toxicologic and epidemiologic data on asbestos in occupationally and spontaneously exposed subjects, and the hazards of asbestos as released by automobile brake linings are discussed. Lung fibrosis, bronchopulmonary cancer, as well as pleural and peritoneal mesothelioma due to inhaled asbestos in occupationally exposed populations were determined. The latency period of asbestos-induced cancer ranges from 15 to 20 years. Crocidolite and antophyllite are more powerful carcinogens than chrysotile. The irritation of the respiratory tract is essential for the formation of lung cancer by asbestos. The carcinogenic effect of different types of asbestos may be due to and be dependent of the presence of impurities, such as chromium, iron, beryllium, magnesium, nickel, cobalt, and manganese that are carcinogenic, as well as of traces of tar, mineral oil, and benz(a)pyrene. The metallic impurities may inhibit the benz(a)pyrene hydroxylase activity. The increased frequency of positive findings of screenings for asbestos in the lungs of city dwellers indicates a minimum, though not negligible hazard, of asbestosis due to asbestos released by brake linings in occupationally not exposed subjects. In this respect, drum brakes, retaining worn-off asbestos particles practically quantitatively inside the brake housing, are less hazardous than disc brakes which release all worn-off asbestos into the atmosphere in nondriven form.

42917

APTIC NO. 66174

Eddy, T. P.

COAL SMOKE AND MORTALITY OF THE ELDERLY.

Nature (London), 251(5471):136-138, Sept. 13, 1974. 13 refs.

Mortality from falls in old people is so closely related to mortality from fractures of long bones, particularly of the proximal femur, that it seems related to bone fragility. Common contemporary factors may affect mortality and possibly bone fragility for both sexes. Coal smoke may be one such factor. A statistical study was made on British mortality, and death rates from falls were correlated with death rates from bronchitis and domestic smoke pollution. Mortality from falls seemed to be related to domestic smoke pollution independently of the relationship to mortality from bronchitis. Since increased smoke levels decreased ultraviolet radiation, the effect of smoke on mortality from falls and fractures may have been due to reduced endogenous synthesis by ultraviolet light.

42918

APTIC NO. 66386

Freeman, Gustave, Laszlo T. Juhos, Nazzareno J. Furiosi, Rowena Mussenden, Robert J. Stephens, and Michael J. Evans

PATHOLOGY OF PULMONARY DISEASE FROM EXPOSURE TO INTERDEPENDENT AMBIENT GASES (NITROGEN DIOXIDE AND OZONE). *Arch. Environ. Health*, 29(4):203-210, Oct. 1974. 27 refs.

Rats in exposure chambers were subjected to mixtures of nitrogen dioxide and ozone at levels reached in severe smog and were subsequently examined histologically for injury. The major site of injury observed was at the level of the junction of the respiratory bronchiole and the alveolar duct, somewhat more peripheral than the lesion caused by NO₂ alone. Ozone, the more toxic component, was largely responsible for the injury at the selected concentrations and for the characteristic fibroblastic activity in that region. The observations suggested that potential injury from ambient smog resulted mainly from O₃, whereas injury from tobacco smoke was due largely to its relatively high concentration of NO₂. Smoking and residing in smoggy areas appear to be additively injurious. (Author abstract modified)

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APTIC NO. 66247

Fukuie, Noriko

BIOLOGICAL EFFECT OF HEAVY METALLIC CATALYST PARTICLES TO BE EXHAUSTED IN THE AIR.

(Jukinzoku shokubai biryushi no seibutsu ni oyobosu eikyo). Text in Japanese. *Nippon Jidosha Kenkyujo Kenkyu Sokuho (Res. Lett. Japan Automob. Inst.)*, no. 19:63-69, March 1974.

Copper, chromium, iron, and aluminum catalysts were administered orally to rats over a 1-month period, followed by examination of the internal organs for metal distribution and pathological changes in an investigation of the toxicity of the heavy metals. No pathological changes were observed, although the point of maximum accumulation rate was different between Cu and Cr among respective groups of rats. The results indicate that there may be an optimum absorbing concentration for each of the metals.

42920

APTIC NO. 66379

Fukuta, Shinji, Toru Yamamoto, Takanari Tokuhisa, Junichi Mise, and Urizo Fujii

SERUM IGE LEVEL IN CHRONIC OBSTRUCTIVE LUNG DISEASES: WITH SPECIAL REFERENCE TO BRONCHIAL ASTHMA.

(Heisokusei hai shikkan ni okeru kessei IgE chi-kikanishi zensokushorei o chushin to shite). Text in Japanese. *Nihon Kyubu Shikkan Gakkai Zasshi (Japan. J. Thoracic Dis.)*, 12(7):386-391, July 1974. 24 refs.

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