

FILE NAME: International Harvester (INTH)

DATE: 1972 Mar 23

DOC#: INTH006

DOCUMENT DESCRIPTION: Memo - OSHA Target Health Hazard Program

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EMPLOYEE ENVIRONMENTAL HEALTH AND SAFETY

CHICAGO, ILL.

SAFETY SUPERVISOR

March 23, 1972

~~Works Managers~~
~~Engineering Center Managers~~

Subject: OSHA Target Health Hazard Program



During February, OSHA announced a new "Target Health Hazards" program to focus attention on five substances they believe constitute potentially serious hazards to health in the workplace. The five substances listed are carbon monoxide (CO), asbestos, crystalline silica, lead and its inorganic compounds, and raw cotton dust. Threshold Limit Values (TLV's) have previously been established for all these materials and are listed in Subpart G 1910.93 as air contaminants in the OSHA standards of May 29, 1971 (see OSHA Standards Manufacturing & Engineering Release No. 1).

OSHA inspection priorities are being altered to accommodate this new program so that Compliance Officers are now directed to give special attention to the five target health hazards. As a result, Compliance Officers and OSHA Industrial Hygienists will be on the alert during their inspections for possible employee exposures to these compounds.

Carbon monoxide, crystalline silica, and lead or lead compounds can be found in IH manufacturing and engineering facilities in concentrations which could cause problems. Exposure to asbestos fibers and cotton dust is not considered a problem in our operations.

We have presented below some of the primary considerations which must be kept in mind in dealing with each of these five compounds.

Carbon Monoxide

The TLV for carbon monoxide is 50 parts per million (0.005 percent by volume) based on a time weighted average exposure over an eight-hour work period. It can be a problem where internal combustion engines are operated inside buildings or confined areas such as loading and unloading tractor trailers. CO occurs in foundries primarily in certain areas of cupolas, at pouring stands, and where castings are "hooked out." Heat treat operations, blast furnaces, and welding in very confined areas may be other sources of CO.

Crystalline Silica (Free silica)

The TLV for dust containing crystalline silica (commonly referred to as free silica, quartz, or silicon dioxide) depends upon the amount of crystalline silica present in the dust. Exposures are evaluated by actual weighing of the respirable dust collected in the breathing zone of employees or by counting the number of particles of respirable size in the breathing

zone. In either case, the higher the percentage of crystalline silica present, the greater the hazard and the lower the TLV.

The major exposure to crystalline silica occurs in foundry operations where fine particles of sand become airborne. Leakage from sand handling equipment, dust from clean-up operations, dust stirred up by fans at casting hook-outs, the use of compressed air for cleaning purposes, core knockouts, etc., are common sources of dust containing a fairly high percentage of crystalline silica.

It is mandatory that all employees having potential exposure to crystalline silica be given an annual chest X-ray.

Lead

The TLV for lead and its inorganic compounds is 0.2 milligrams per cubic meter of air sampled, based on a time weighted average over an eight-hour work period. This target hazardous substance can appear in unexpected places. Consequently, Works Hazardous Materials Committees must be alert for new products or processes involving lead in some form. Potentially serious exposures to lead exist in the production and processing of leaded steel, and during the welding, torch cutting, or mechanical sanding of surfaces coated with paint that contains lead pigments. Arc welding onterne plate, lead pots in heat-treat operations, and lead pots for miscellaneous leading operations are other examples of possible sources of exposure to lead.

The Industrial Hygiene Laboratory will continue the lead-in-urine sampling program for all painters as well as others that may be exposed to airborne lead fume or dust. We believe this program offers the best screening method available at this time for monitoring exposure to lead.

Asbestos

The TLV for asbestos at the present time is an emergency standard and states that there shall be no more than five asbestos fibers greater than five microns in length per cubic centimeter (cc) of air sampled. This has been criticized as being too high, and NIOSH now recommends that the TLV should be no more than two asbestos fibers greater in length than five microns per cc of air sampled.

We are aware of only one production operation that could be a problem. This involves the milling of brake lining at Memphis Works. The operation has excellent local exhaust ventilation, but if the job is not "farmed out" it will be necessary to take air samples to insure that the collection system is efficient. Any production operation that is capable of generating airborne asbestos dust, such as machining or grinding of brake linings, is suspect and must be checked.

Nonproduction operations, such as the infrequent drilling, sawing, or ripping out of asbestos insulating materials, must be done only with respiratory protection. A reusable or single use filter-type respirator approved under Schedule 21B, U.S. Bureau of Mines, must be used.

Cotton Dust (Raw)

The TLV for airborne raw cotton dust is 1.0 milligram per cubic meter of air sampled, based on a time weighted average. We think there is no exposure to cotton dust in our manufacturing operations.

Evaluation of the exposure to CO, crystalline silica, and lead requires a survey of some duration, including air sampling and sample analysis. If you think there may be exposure to any of the five target health hazard compounds in your operation which has not previously been studied by the Industrial Hygiene Section of the Employee Environmental Health and Safety Department, contact this department for assistance.

The material presented in this letter should be reviewed with those members of your staff having responsibility for the various areas involved. We suggest that the letter be filed in your O.S.H.A. Binder at the front of the book.

Any questions on this letter should be directed to Mr. E. L. Alpaugh of this department.

R. J. Black
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Manager

cc: Vice President, Industrial Relations
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