

STATE OF OHIO
DIVISION OF SAFETY AND HYGIENE
THE INDUSTRIAL COMMISSION OF OHIO
700 West Third Avenue
Columbus, Ohio 43212

RE: PACKARD ELECTRIC DIVISION, G.M.C.

1. On April 4, 1966 a visit was made to the above named company to check on an alleged beryllium hazard at the request of both management and the union.
2. Contact was made with James A. Waldron, Safety Supervisor; Dr. G. A. Sudimack, Medical Director; Walter Kohn, Supervisor of Field Operations, Industrial Hygiene Department, G.M.C.; Arthur J. Richards, Safety Engineer; George W. Cramer, Jr., Plant 11 Superintendent; Lynn Tellander, Plant 8 General Foreman; Gordon E. Byers, Director of Labor Relations; James Herman, Labor Relations Representative; Edward Cleckner, Zone Committeeman, Local 717 IUE-AFL-CIO; Edward Fire, Union President; Richard Taylor, Shop Chairman; Morris Muntz, Committeeman, safety & compensation representative for the local union.
3. The company manufactures automotive electrical wiring, aircraft electrical cable, automotive harnesses and appliance cords, in addition to plastic parts and miscellaneous terminal connections.
4. Since 1954, the company has used an alloy containing a small percent of beryllium for terminals. Recently, the union became apprehensive about the use of the alloy and they are now using alloy containing 0.2% of beryllium. This alloy has the warning: "Do not breathe dust or fumes generated by mechanical thermal or chemical processing. Sold for manufacturing purposes only. Industrial hygiene information available on request."
5. Plant 8 - Department 841

TOP

This department is located on the second floor (south floor of the south building). It is approximately 250' X 140' X 20' to the low bays. In this department, terminals containing 0.2% beryllium .0159" thick are crimped and soldered to multi strand 14 gauge wire. The terminals at the time of this visit had been silver-plated. 2020 ends are soldered per hour. This work is done approximately three hours every three weeks.

heating

The soldering is done by resistance ~~soldering~~. The solder melts at 650°F. The company carries the solder pot at 800°F so it is probable that the temperature reached in the soldering operation is below 800°F.

Beryllium Sample

*with a Union Industrial Equipment Co., Hi-volume
Sampler with cyclone separator,*
A filter paper sample was taken approximately one foot from the breathing zone of an employee operating the press and downwind from the press. This sample was sent to Kettering Laboratory for an analysis and they report .00004 milligrams per cubic meter of air (mg/m^3).

6. Plant 11 - Department 1108

Terminals are stamped from 0.2% beryllium metal .015" thick and approximately 1½" wide in a Niagara press PE8093. This press is located at Column K-15. This press makes approximately 275 strokes per minute. The stock is oiled. A diesetter starts the machine and then goes away and leaves it so that no one is there in attendance. Two presses operating 15 days per month takes care of the production at the present time. Inasmuch as there is no heat applied and there is no abrasion of the metal, it was not thought necessary to take a sample at this point. However, the representative of the General Motors Corporation did take a sample.

7. *mg/m³* The concentration of beryllium found was well below the Threshold Limit Value of .002 ~~MS/M~~ established by the American Conference of Governmental Industrial Hygienists, and it is concluded there is no occupational health hazard.

The Threshold Limit Values refer to air-borne concentrations of substances and represent conditions under which it is believed that nearly all workers may be repeatedly exposed, day after day, without adverse effect. Because of wide variation in individual susceptibility, exposure of an occasional individual at or even below the threshold limit may not prevent discomfort, aggravation of a pre-existing condition, or occupational illness.

8. The plating department where beryllium terminals are plated with silver was visited. The terminals are not dipped in an acid so there is no evolution of mist. In addition, the plating tanks are well ventilated. It is believed that no occupational health hazard exists at the plating department.

9. Had there been grinding or abrasion of the beryllium alloy and if small particles were given off, recommendations relative to exhaust ventilation and sampling would have been made. However, no recommendations are made at this time because a) there are no small particles produced, b) the temperature is below that at which fumes are given off and c) the stock is oiled as it goes through the press.

Respectfully submitted,

D. DeWitt Huffman
Asst. Chief Eng. & Hygiene

DDH/agw

note next page

LEFT WITH COMPANY FOR UNION

Hygienic Guide Series on Beryllium

Threshold Limit Values for 1965

LEFT WITH COMPANY FOR RETURN TO THIS DIVISION

Workshop on Beryllium

Simplified Industrial Hygiene Controls for Machining Metallic Beryllium

Beryllium Data Sheet 562

Threshold Limit Values for 1965