PLAINTIFF'S
EXHIBIT
BRK-13

May 14, 1971

Mr. Stanley C. Wright
Safety Director
Inland Division
General Motors Corporation
2727 Inland Avenue
Box 1224
Dayton, Ohio 45401

Dear Mr. Wright:

Enclosed are two copies of a reportoon the visits made to your company on March 31, and May 12, 1971.

It was a pleasure to meet with you, Mrs. Margaret Priser, and Dr. Krebs and the courtesy extended was very much appreciated.

If this Division can be of assistance to your company at any time on industrial hygiene or engineering problems relating to safety, please let us know.

Very truly yours,

MEH
Maurice E. Hatten, P.E.
Industrial Hygiene Engineer

ifm
Enc:

71.

May 14, 1971

Re: Inland Division
General Motors Corporation
2727 Inland Avenue
Box 1224
Dayton, Ohio 45401

1. On March 31, 1971, the above named company was visited by employee request for an industrial hygiene investigation relative to fumes from rubber joining presses. Additional tests were obtained on May 12, 1971, at the request of the company.

2. Those contacted were:

3-31-71	Mr. Stanley C. Wright Safety Director
	Mrs. Margaret Priser Safety Committee
5-12-71	Mr. Stanley C. Wright Safety Director
	Dr. William H. Krebs Industrial Hygiene GMC

3. The company manufactures molded rubber linings for the automobile industry, and other rubber and plastic products. "Roof rails" (seals) for front doors of automobiles are processed in the end-joint press area.

4. The ends of molded neoprene rubber linings are joined by cement, with heat and pressure, in end-joint presses. A small amount of smoke rises momentarily (about 20 seconds) when the press is opened. The standard press heat is 125° F. Neoprene is polymerized chloroprene.

5. The large room has 28 or 30 press lines with 6 fixtures each. The operation is essentially the same as for the last 15 years.

6. Measurements of combustible gas and contaminants were obtained and are reported in the accompanying tables: paragraphs 6A, (3-31-71) and 6B, (5-12-71).

7. The room is ventilated in accordance with the Kenneth Robinson system of 2 cubic feet pf air per square foot of floor space in summer, one in winter, plus an additional amount relative to local exhaust losses. Make-up air is supplied from overhead vents. A 24" Dia. duct supplies three lateral 28' long ducts having 10" Dia. vents. The laterals are 3' wide for half of length, then 16" wide, with a depth of 6" in both sections.

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8. The south wall of the building has many 6' x 4' center pivoting windows that may be opened as required. The outdoor temperature on 3-31-71, was 63° F at 1:00 p.m., dry weather. On 5-12-71, the temperature was about 40 - 50° F (a.m.), with occasional light rain, winds N-NW, 15-20 mph.

9. 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.

10. This investigation was made in accordance with IC-5, Specific Safety Requirements of The Industrial Commission of Ohio Relating to All Workshops and Factories.

11. The following suggestions are offered to maintain ventilation, and minimize breathing of contaminants, or other exposure:

A. Tape test stripe to all ventilation outlets to verify functioning and amount of flow;

B. Do not purchase cements or solvents containing benzene in significant amounts;

C. Coordinate window opening with wind direction, velocity, and air temperature;

D. Verify that chloroprene (2-chloro-1, 3-butadiene) is not present in an amount exceeding 25 ppm: TLV;

E. Examine dust collection in exhaust ducts for peroxide formations, or other hazardous material. Refer to enclosed chemical safety data sheets for description of chemicals.

Respectfully submitted,

MEH
Maurice E. Hatten, P.E.
Industrial Hygiene Engineer

lfm
Enc: Benzoyl Peroxide
Butadiene
Styrene Monomer

13.

INLAND DIVISION

GENERAL MOTORS CORPORATION

Time	Location	Test Method	Material Measured	Concentration Found	TLV * 8 hr. Basis	Remarks
P.M. - 3-31-71.						
2:00 approx.	Outdoors.	MSA Combustible Gas Indicator, Model 40.	Combustibles indicated by this meter.	0.4% L.E.L. (Lower Explosive Limit)	—	Reference level, outdoors.
2:00 approx.	Inside plant near entrance to work area.	Same.	Same.	0.8% L.E.L.	—	—
2:05	Breathing Zone (BZ) at end-joint press, closed.	Same.	Same. (As toluene)	1.2%; less reference, 0.8%: approx. 90 ppm.	200 parts per million (ppm)	Considering all combustibles measured above reference level as toluene alone. Refer also to da in paragraph 6B.
2:12	One inch above rubber cement in cup (5 on each line within arm reach (non-BZ).	Same.	Same.	20% L.E.L. max.	—	—
2:15	BZ	Same.	Same.	1.6%; less reference, 1.2%: approx. 135 ppm.	200 ppm.	Sample line pur but indication be high followi previous high c centration sam Refer also to d in paragraph 6B

2:20	BZ, general area.	MSA Indicator tube, color of stain.	Carbon monoxide.	5 ppm.	50 ppm.	Very minor amount.
2:30	Same.	MSA Indicator tube.	Carbon dioxide.	350 ppm.	5000 ppm.	Very minor amount, near normal atmospheric level.
3:00	- 2nd Shift.					
3:15	1 - 2" above rubber cement cup.	Draeger tube.	Hydrogen fluoride.	None.	3 ppm.	—
3:20	At end joint, press open.	Same.	Same.	Same.	3 ppm.	—
3:25	Same.	Same.	NO + NO_2 as NO_2	Trace, less than 0.1 ppm.	5 ppm.	Very minor amount.
3:33	End joint press upon opening, rubber heated, 1 or 2" above press, Non-BZ.	MSA Combustible Gas Indicator, Model 40.	Combustibles.	Excursion of 3-5 seconds to 6% L.E.L.	—	Less combustible material than at 1" above cement cup.
3:40	Same.	Draeger tube.	Chlorine.	None.	1 ppm.	—
3:45	Same.	Same.	Phosgene.	None.	0.1 ppm	—

PARAGRAPH - 6B
5-12-71
a.m.

10:10	Outdoors, parking lot.	MSA Combustible Gas Indicator, Model 40.	Combustibles indicated by this meter.	0.4%.	—	Reference Level, outdoors.

10:20	In plant, at entrance, BZ (large door nearby).	Same.	Same.	0.1% less reference, 0.0% or 0 ppm.	—	Simultaneous testing by Dr. Wm. Kreb with another instrument indicating ppm directly. Tests following agreed within 10% error.
10:25	Foreman's desk, BZ.	Same.	Same,(as toluene).	0.5% less reference, 0.1% or 10 ppm approx.	200 ppm.	Considering all combustibles measured above reference level as toluene alone.
10:45	Aisle of work area, end joint presses. BZ.	Same.	Same	0.6% less 0.4%: 0.2% or 22 ppm, approx.	200 ppm.	Lunch break schedule, 10:45 to 11:15.
10:50	BZ during opening of presses; this line continuing briefly for tests.	Same.	Same.	0.8% to 0.9%, less 0.4%: 0.4 to 0.5% or 50 ppm approx.	200 ppm.	—
10:55	Same.	Draeger tube CH 248, Benzene.	(Aromatics) benzene, toluene, xylene.	7 ppm aromatic as benzene. Benzene not indicated.	25 ppm benzene. 200 ppm toluene.	Benzene tube color development indicated presence of toluene but not benzene. Not accurate method for toluene.
11:05	Floor, aisle, end-joint press work area. Non-BZ for operators.	MSA Combustible Gas Indicator, Model 40.	Combustibles.	0.4% less 0.4%: 0.0%.	—	Good ventilation of floor.

11:10	10 - 12" above rubber cement cup; presses not operating during remainder of lunch break. (Near BZ.)	Same.	Same (as toluene).	0.7 - 0.8%, less 0.4%: 0.3 - 0.4% or 40 ppm approx.	200 ppm.	—
11:15	Non-BZ, one inch above cement in cup.	Same.	Same.	4.- 8% with a brief peak at approx. 20% L.E.L.	—	Air conditioning turning on and o causing variation in readings.
11:20	BZ, aisle of end joint press area; not operating.	Same.	Same.	0.6% less 0.4%: 0.2% or 22 ppm, approx.	200 ppm.	—
11:35	BZ, end joint presses in operation.	Draeger tube. CH 254	Aliphatic hydrocarbons.	Trace.	—	Indication possi due to interfere by aromatic or o compounds.
11:40	Same.	Draeger tube. CH 244.	Trichloroethylene.	None.	100 ppm.	No indication o any chloride or chlorine contain compounds capabl of reacting with this indicator.
11:50	Same.	Draeger tube. CH 262.	Formaldehyde.	None.	2 ppm, (not to be exceeded per intended TLV change).	No further testi on this visit.

*TLV - Threshold Limit Values.

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