FILE NAME: Goodyear (GY)

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The Industrial Commission of Ohio
Division of Safety and Hygiene
2325 West Fifth Avenue • Columbus, Ohio 43204
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PAIR UP FOR SAFETY '77 IN LABOR & MANAGEMENT

April 8, 1977

Legal Section
Industrial Commission of Ohio
Ohio Departments Building
Columbus, Ohio

Risk #SI-2551

Attn: Jeff Nackley

Re: O.D.# 12619-22
James H. Coffey

Dear Sir:

On February 23 and 24, 1977, a visit was made to the Goodyear Tire and Rubber Company, 1144 East Market Street, Akron, Ohio 44316, to evaluate conditions under which the claimant had worked.

The company manufactures various rubber goods.

According to company records, the claimant's work experience is as follows:

Date	Department	Operation
8-19-46	234 B	helper and loader
9-11-46	384	miscellaneous worker
11-18-47	130	miscellaneous worker
8-12-48	152 A	clear machines
6-30-50	132	utility
10-3-50	133	serviceman - temporary
11-3-50	133	calender helper
3-8-51	133	wind up operator on 2 calendar
4-13-51	133	calendar helper
6-8-55	133	service
6-13-55	263	service
7-25-55	263	classify defects
1-26-56	105 P	Special supervisor training
9-9-57	263	classify defects
11-1-57	143	weigh and book treads
11-25-57	162	lay up wire loaded treads
1-6-58	162 A	lay up wire loaded treads
2-20-58	375 A	help form skins
4-2-58	141 E	operate cold press
4-11-58	141 E	build wire plyboards
5-19-58	273 A	stretch - cure fire hose

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Governor, James A. Rhodes • Industrial Commission Chairman, William W. Johnston • Vice Chairman, Raymond A. Connor • Member, Leonard T. Lancaster • Safety & Hygiene Supt., Philip A. Workman • Asst. Supt., Bob Riley • Manager of Safety Congress, Lawrence J. Whalen.

Date	Department	Operation
11-10-58	162 A	lay up wire treads
1-26-59	133 A	wind up helper #2 calender
7-20-59	233 B	calendar helper
10-16-59	233 B	calender 1st man
10-10-60	271 F	supply mats to heaters
1-9-61	152 A	truck heads (temp.)
8-30-61	150 A	wash, buff, and cement treads
9-11-61	233 B	first man
12-29-61 & until March 1976.	233 B	calender learner, helper, and operator

There are no pertinent medical records possessed by the company concerning the claimant's present condition.

From 1946 through 1961 the claimant frequently worked with three major solvents in use throughout much of the plant; odine, robine, and arine. These are primarily gasoline, toluene, and xylene, respectively. In addition, benzene was used in this plant at times in the past.

Since the early 1960's the claimant worked with the solvent "chlorinol" in Dept. 233 B, which is actually methyl chloroform.

Bulk samples of three solvents were obtained and analyzed for their benzene composition. Results are as follows:

SOLVENT	Per cent BENZENE
odine (gasoline)	0.1%
robine (toluene)	negative
arine (xylene)	negative

Apparently these solvents presently do not contain any appreciable amounts of benzene. There would be no benzene content present in the chlorinol.

The known occupational le .emias are those induced by benzene and ionizing radiation. It was not until 1928 that the action of benzene was shown to be a cause of leukemia. Many single cases have been reported. These are mostly acute myeloblastic leukemias; a few cases of acute erythroleukemia have also been reported. (The claimant allegedly has acute myeloblastic leukemia).

Leukemia occurs most frequently in subjects with deficiency in number of blood erythrocytes and their regenerative capabilities. In some cases a long latent period (up to 12 years) between cessation of exposure and occurrence of leukemia has been observed.

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Recently an increased rate of chromosome aberrations in lymphocytes has been reported in subjects with past exposure to benzene. Some stable chromosomal aberrations, persisting in bone marrow cells, can give rise to abnormal clones (cells descended from a single cell), which may eventually cause the development of leukemia even after long latent periods. Chromosome studies on peripheral blood lymphocytes can be a useful diagnostic tool in assessing previous severe exposure to benzene, provided other possible causes of chromosome aberrations are eliminated.

There is no certainty among the company personnel as to when benzene, as a straight (pure) solvent was discontinued, but it is thought by most to be in the early 1940's. The other solvents mentioned previously were phased in at different times although the term "bennie" (for benzene) was used for a long time afterwards to identify the solvents. Odine was used as far back as 1947.

The following is a list of job descriptions involving significant solvent usage as described by the claimant:

Department 152 A (1948) : This is purportedly one of his heaviest exposures to solvent vapor. He was responsible for cleaning and servicing tire building machines. One gallon containers would be located by each machine which contained "bennie". He would dip brushes into the container and brush (clean) the drums of the machines and remove tire "dough" from the machines and floors. He would maintain (refill) containers. He wore no gloves during the cleaning operations. (The solvent benzene can be absorbed through the skin). This department was phased out in 1975.

Department 132, (1950) : Utilityman; Solvent was used to unglue or separate rubber sheets or slabs which would be "sticking" together. Usually a spray can applicator was used to apply the solvent until the sheets could be pulled apart. According to the company, the solvent was odine. Previous to this texene was used but this change over of solvents was gradual. Both are gasoline type solvents.

Department 133, #16 calender: Solvent was used for cleaning the calender or again releasing stuck rubber sheets which may have required the use of several gallons of solvents. Average length of time for one of these may be approximately 15 minutes. Occassionally it may have taken an hour. This would appear to involve a short, acute exposure to solvent vapor. According to the company, odine was and is the solvent used for the job. Experimental rubbers are run here and involved usage of many solvents and frequent usage of them, according to the claimant, just by nature of the experimental operations.

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Department 162 (1957-58) : Rubber sheets were laminated together by applying a wire mesh and cement between the sheets. Airplane tires were retreaded in this manner. Solvent was used for thinning purposes. The department is phased out.

Department 150 A (1961) : Again retreads were cemented onto tire carcasses with a brush applicator. This operation was moved to Topeka, Kansas in 1969.

Department 233 B (1961 and on) : The claimant believes this to be one of his heaviest exposures to solvent vapors. He worked around the calendering operations separating rubber strips by the use of solvent as done previously. According to the company, the only solvent ever used here was chlorinol, which is methyl chloroform.

The claimant states that his other jobs involved little use of solvents although they were "always in the area." Incidentally, departments 375, 384, and 271 F have also been phased out.

Company personnel state that odine has always been used in Dept. #132 A 133, and 162. One believes that benzene (erbine) was used in rubber cement in dept. #145, perhaps in the 1940's.

Presently, and throughout the years the company has probably used solvents bought from many different suppliers. Each supplier themselve may have slightly changed, over the years, their formulation on any one solvent. It has been known that commercial grades of toluene, xylene, and petroleum naphthas may contain from 0 to 10% benzene and the content varies in each batch. Petroleum naphtha is used to make rubber cements, in conjunction with methyl ethyl ketone, toluene, and hexane. The claimant has, over the first 15 years, worked with cements, toluene, xylene, and gasoline. Gasoline has been known to contain the impurity, benzene.

It therefore connot be ruled out that the claimant did, in earlier times, have inadvertent significant exposures to benzene via skin absorption or inhalation.

Sincerely yours,

Brian K. McClelland

Brian K. McClelland
Industrial Hygienist

BKM/ng

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