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Study links chip chemicals to workers' miscarriages

BY JOHN MARKOFF
New York Times

IBM has warned its workers and other companies that two chemicals widely used in manufacturing semiconductor chips may significantly increase the risk of miscarriage.

The computer maker acted after a study it commissioned by health researchers at Johns Hopkins University in Baltimore found that among 30 women who worked with the chemicals at two IBM plants and then became pregnant, 10 had miscarriages — a

33.3 percent rate.

The researchers believe there is a significant relationship between contact with the chemicals and workers' miscarriages.

Ordinarily, 10 percent to 15 percent of women have miscarriages during the first 20 weeks of pregnancy, according to the Merck Manual, a medical reference book used by doctors.

The two chemicals, diethylene glycol dimethyl ether and ethylene glycol monethyl ether acetate, are used as solvents in a portion of

See **CHEMICALS**, Back Page

IBM warns of miscarriage risk

■ CHEMICALS

from Page 1A

the chip-making processing that involves etching away some of the material deposited on a silicon wafer.

"The warning is a reflection of our increased understanding of the hazards of these chemicals," said James Cone, an expert in toxic chemicals and an assistant clinical professor at the University of California, San Francisco.

"People have touted these as a safe alternative to chlorofluorocarbons and other chemicals, but we're finding out that there may be problems here as well."

Based on the study's findings, a number of other technology companies have issued similar warnings in recent weeks. The chemicals are also used in other industries, such as aerospace and printing, where thousands of workers may have come in contact with them.

None of the companies have stopped using the chemicals, but several chip makers have decided to offer alternative jobs to workers concerned about exposure.

"We have been trying to alert companies (about dangers posed

by) these ethers for 10 years. . . . Now, because the industry has been stalling, there's a body count to point to," said Ted Smith, executive director of the Silicon Valley Toxics Coalition, a group that monitors potentially dangerous chemicals in the environment and the workplace.

Representatives of Silicon Valley companies that use the chemicals could not be reached Sunday for comment.

International Business Machines Corp. commissioned the Johns Hopkins study in 1987 in an attempt to prove that its semiconductor manufacturing operations were safe. It acted after an earlier study by the University of Massachusetts for Digital Equipment Corp. developed evidence of significant health risks in chip-making operations, an IBM spokesman said.

The spokesman, Jim Ruderman, said the company did not believe there was reason for alarm.

"We want to be careful," he said. "We're not trying to be alarmists. There hasn't been a mass panic, nor should there be."

IBM issued the warnings last month after it received prelimi-

nary data from the study, which is not scheduled to be completed until next year.

The study, which looked specifically at potential problems for women, tracked workers at IBM plants in Burlington, Vt., and East Fishkill, N.Y., from 1980 to 1989. It found that the miscarriage rate for workers at the plants who did not come in contact with either of the chip-making chemicals was significantly lower than for women who did.

The study showed 62 miscarriages out of 398 pregnancies, or 15.6 percent, among women who did not handle the chemicals, in contrast to the 33.3 percent rate for the women who did.

IBM gave information from the study to companies that are members of the Semiconductor Industry Association.

Intel, Texas Instruments, AT&T, Advanced Micro Devices, Signetics and National Semiconductor have all notified their workers of a potential health risk from exposure to the chemicals in recent weeks, said Thomas Beer-mann, an association spokesman.

Mercury News staff writer Sue Hutchison contributed to this report.