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Sematech stops using risky liquid chemical

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The potentially harmful effects of a chemical used in computer chipmaking operations has prompted its removal from Sematech, a company spokesman said last week.

Until recently, the chemical — diethylene glycol dimethyl ether, or DIGLYME — had been used in a photoresist development project at the Southeast Austin facility that houses a consortium of semiconductor manufacturers, said Sematech's Buddy Price.

Photoresist is a photosensitive liquid applied to wafers for transferring circuit patterns onto wafers.

Price said Sematech's decision to discontinue using the chemical was not in direct response to the preliminary findings of an IBM-commissioned study that examined clean-room operations at plants in East Fishkill, N.Y., and Burlington, Vt., between 1980 and 1989.

"Some people here were concerned about the chemical itself. They were concerned it might have harmful effects. If we're able to find a cleaner, safer way to do things, then we do it," he said.

Sematech has switched to another chemical, polypropylene glycol monoethyl ether, Price said.

The substitute is a water-based solvent commonly used as an additive in animal food, cosmetics and other products, according to David Bary, a press officer with the U.S. Environmental Protection Agency's Dallas office.

"As people become more educated and aware of certain chemicals, they're going to be looking for alternatives that are non-toxic," Bary said. "We all are learning a lot as we go along."

One in three miscarried

Analyzing data over a nine-year period, researchers at Johns Hopkins University School of Public Health and Hygiene found 10 miscarriages out of 30 pregnancies of female employees working in clean

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rooms that utilized two chemical compounds: DIGLYME and ethylene glycol monoethyl ether acetate.

The latter compound is not used at Sematech. About five gallons of DIGLYME was used each month at Sematech, Price added.

An IBM corporate spokesman at headquarters in Armonk, N.Y., commented on the results of the Johns Hopkins study.

"The actual number of miscarriages was small but statistically meaningful," Jim Ruderman said.

The study found no adverse reproductive health problems in the wives of IBM employees.

The Johns Hopkins data is still being analyzed and is expected to be completed and released early next year, Ruderman said. Meanwhile, the preliminary results have been shared with IBM companies and employees worldwide, the U.S. Environmental Protection Agency (EPA) and the Semiconductor Industry Association (SIA) in San Jose, Calif.

The association has in turn released the information to its 40 member companies, said SIA's Tom Beerman.

Both IBM's Ruderman and Sematech's Price said employees have been encouraged to speak with managers or medical personnel should questions arise about the safety of the chemicals in use.

"The health and safety of our employees is something we don't compromise," Ruderman said. "We are re-emphasizing our environmental concerns, and with conditions changing all the time, we are constantly looking for safety updates."

Motorola facilities are beginning to phase out the use of the DIGLYME chemicals, said Dan Rogers, spokesman for Motorola in Austin. He said he could not comment on the current status of local plants.

Congress spurs activists

Ted Smith, chairman of the Campaign for Responsible Technology (CRT) in San Jose, said the Johns Hopkins preliminary findings should further the goal of environmental organizations to achieve hazard-free workplaces in the semiconductor industry.

The timing of the news about DIGLYME is fortuitous, Smith added, because of Congress's recent decision to earmark $10 million of Sematech's $100 million in 1993 federal funding for environmental research.

Smith was in Austin Oct. 5 for a joint press conference with the East Austin-based PODER (People Organized in Defense of Earth and its Resources) and the Southwest Network for Environmental and Economic Justice, based in Albuquerque, N.M.

The organizations' representatives praised the Congressional mandate for research as a step forward in teaming environmental groups with the semiconductor industry to work for a cleaner environment.

"This is a new direction," said Susana Almanza, a PODER leader. "Sematech is such an important piece of environmental control. They are in a better position than anyone else in the semiconductor industry to do research on the safety of certain chemicals."

"I think it's very significant," Smith said. "It means Sematech is going to be working with us. They had not taken us seriously before and now they're being told to take us seriously."

Smith said CRT and PODER now are calling on Sematech's member companies to match the $10 million appropriated by Congress for environmental research.

Sematech, however, foresees no major changes as a result of the Congressional mandate for environmental research.

"This is business as usual for us," Price said of the Congressional funding. "We consciously attempt to make things cleaner and safer. We recycle and reprocess 96 percent of the acids that we use here."

Sematech also is spending $20 million on an environmentally sound project involving a vapor etch machine, Price said. The machine is designed to use gases instead of chemicals in the mircopatterning process.