

# CRT Toxic Timeline on Glycol Ethers

**January 1981** Santa Clara Center for Occupational Safety and Health publishes technical report documenting that glycol ethers cause reproductive disorders in animals, citing a NIOSH (National Institute of Occupational Safety and Health) study.

**May 1982** California Department of Health Services (Hazard Evaluation System and Information Service) issues health warning to California workers on glycol ether solvents, finding that "glycol ethers have damaged the reproductive systems of test animals, raising the possibility that they may cause similar effects in humans."

**May 1982** Semiconductor Industry Association issues alert to semiconductor executives regarding glycol ether health effects, particularly reproductive effects.

**September 1983** Chemical Manufacturers Association issues Research Status Report on glycol ethers, documenting extensive reproductive toxicity in animal studies.

**January 1985** California Department of Health Services releases its epidemiological study on residents exposed to semiconductor solvents that had leaked into drinking water from a leaking underground tank at Fairchild Semiconductor in San Jose. "The study reports birth defects and miscarriages at 2 1/2 to 3 times the expected rates.

**December 1986** An epidemiological study conducted by Digital Equipment Corporation on semiconductor workers in Hudson, Massachusetts finds miscarriage rates of 2 times the expected rate.

**February 1987** National health and safety coalition releases report on glycol ethers and reproductive hazards in the workplace at the AFL-CIO Executive Board meeting in Florida, urging the semiconductor industry to "ban toxic chemicals, not workers" from the workplace. The coalition sends letters to the SIA and the major semiconductor companies.

**May 1987** Semiconductor Industry Association announces establishment of Scientific Advisory Panel to oversee study of reproductive hazards in the semiconductor industry.

**October 1987** Scientific paper presented to SEMICON Southwest Technical Program in Dallas which outlines effective alternatives to glycol ether use in the semiconductor industry (Alternative Casting Solvents for Positive Photoresist, by Angela Boggs).

**November 1987** California Senate Committee on Toxics holds hearing in Santa Clara County to document reproductive hazards in the semiconductor industry.

**November 1987** Integrated Circuit (predecessor of CRT) writes letter to SIA Scientific Advisory Board to seek participation in oversight of reproductive hazards survey. The request is largely ignored.

**January 1989** SIA signs a \$3.5 million research grant with researchers at U.C. Davis to conduct industry wide study health study. 15 companies agree to participate in a study of 18,000 workers. The results have not been released. IBM does not participate, preferring to conduct its own study through Johns Hopkins University.

**May 1989** Silicon Valley Toxics Coalition publishes research paper in cooperation with the Alternative Technologies Section of the California Department of Health Services entitled "Waste Reduction of glycol Ethers by Source Reduction" which documents reproductive hazards of glycol ethers and identifies and encourages replacement alternative solvents for semiconductor manufacturing.

**October 1992** IBM study results leak out, indicating a miscarriage rate of one-third among IBM semiconductor workers exposed to glycol ethers.

**December 1992** SIA study results revealed that women working in silicon wafer manufacturing rooms who handled photoresist chemicals such as glycol ethers, suffered higher rates of miscarriage than women in the industry who worked in non-fabrication locations. This study reconfirmed results of IBM and DEC studies. Health and safety advocates and environmental groups launch the Campaign to End the Miscarriage of Justice, calling on the industry to adopt aggressive goals and time tables for the phase-out of glycol ethers and other reproductive toxins.

**January 1993:** Members of a delegation from the Campaign for Responsible Technology met with representatives of the Semiconductor Industry Association to discuss concerns about reproductive hazards in the semiconductor industry. The delegation recommended that the industry promptly introduce safe alternatives to glycol ethers and adopt measures to ensure the health and safety of employees. Specific suggestions included: new transfer policies, culturally sensitive training programs, and democratically-elected health and safety committees.

**April 1993:** Representatives from the Electronics Industry Good Neighbor Campaign, a collaboration between the Campaign for Responsible Technology and the Southwest Network for Environmental and Economic Justice submitted a nine-point environmental research proposal along with high-tech economic development, workforce training and labor issues to SEMATECH. Specifically, the EIGNC demanded SEMATECH add community, environmental, and labor representatives to their board of directors and establish a national citizen's advisory board.

**June 1993:** Campaign representatives meet with Interfaith Center for Corporate Responsibility (ICCR), escort them on tour of Silicon Valley, and provide briefing on Campaign to End Miscarriage of Justice. As a result, ICCR has generated letters to CEOs of semiconductor companies urging them to phase out use of glycol ethers.

**August 1993:** Campaign develops and distributes Glycol Ether survey to over 150 companies throughout the Southwest and in Massachusetts, seeking information on current use of glycol ethers and planned phase out schedules, if any.

**For More Information, Contact:**

Campaign for Responsible Technology  
760 North First Street  
San Jose, Ca 95112  
(408) 287-6707