

Mercury Poisoning Fatality in Laboratory

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Dartmouth Faces Fine Of \$13,500: OSHA Proposes Penalty Over Death Of Professor.
By Kristina Eddy, Valley News Staff Writer.

HANOVER - The federal Occupational Safety and Health Administration investigation into the death from mercury poisoning of a Dartmouth College professor has resulted in a citation alleging that the college violated three federal safety standards.

OSHA has proposed fining Dartmouth \$13,500. The investigation into the poisoning of chemistry Professor Karen Wetterhahn took 13 weeks. It was completed on July 16, and the citation was issued last Thursday. The findings of the investigation were announced to the public yesterday.

Wetterhahn, 48, died on June 8 from mercury poisoning apparently suffered about 10 months earlier when a small amount of a mercury compound called dimethylmercury seeped through a disposable latex glove she was wearing while working in her Dartmouth laboratory.

The alleged violations are what OSHA considers "serious", which means there was a substantial probability that death or serious physical harm could result from them and that the college knew or should have known of the hazard.

Dartmouth has scheduled an informal conference with OSHA officials for tomorrow to discuss the investigation's findings and to talk about what the college has done to correct them.

"We take all of this very seriously," said Michael Blayney, Dartmouth's director of environmental health and safety. He said OSHA requirements were met.

OSHA cited Dartmouth for allegedly not providing enough training to employees about the limitations of protective gloves, for choosing and using a glove that was inappropriate and for having deficiencies in the laboratory's chemical hygiene plan.

In hindsight and with the benefit of information gathered during Wetterhahn's illness, it is obvious that latex gloves do not provide adequate protection from dimethylmercury, Blayney said. But given what was known beforehand, Dartmouth provided all feasible precautions to ensure safety, he said.

"This is a situation where we now know - unfortunately, at a very high price - that this material almost instantaneously passes through (latex) gloves," Blayney said.

Dimethylmercury is rarely used and highly toxic. John Winn, chairman's chemistry department, has estimated that there are about 20 research groups in the world using dimethylmercury.

Dartmouth officials said they found only one other reported case of a researcher dying from dimethylmercury poisoning in this century.

"This was a tragic occurrence which saddened all of us who were involved in the investigation," said David May, OSHA's area director for New Hampshire.

May said tomorrow's informal conference may lead to an outline of how Dartmouth will correct the alleged infractions of OSHA standards. "It's a case that isn't closed yet," May said.

Wetterhahn's poisoning stunned those at Dartmouth and in the larger scientific community.

"At a personal level, I was horrified," Chris Allen, a chemistry professor at the University of Vermont, said in a recent interview. "This was really an unexpected event.... It's really a freak accident"

Wetterhahn was an internationally respected expert in heavy metal toxicity. She had 20 years of experience in Dartmouth labs.

One day in August 1996, she was transferring a tiny amount of dimethylmercury from one container to another when a few drops spilled onto her hand, Dartmouth officials have determined.

She removed her latex gloves and cleaned up, Blayney said. Five months later she began to exhibit symptoms of mercury poisoning - an unsteady gait, numbness in her fingers, difficulty in speaking and diminished vision and hearing. Blood tests at that time showed a whole blood mercury concentration 80 times the usual toxic threshold.

Doctors were unable to reverse the damage done to Wetterhahn's central nervous system or to remove all the mercury from her system. She lost her ability to hear and speak before going into a coma, according to Dartmouth officials, and then died about four months later.

"It was a tragic shock and a tragic event," Dartmouth President James O. Freedman said in an interview last month. "I just think it's one of those odd, bizarre, unexplainable" events, he added.

"None of us, I think, understands how it happened," Freedman said.

Allen said he believes that Wetterhahn's poisoning did not result from her carelessness. "The scary thing is we probably would have done what she did" in terms of safety precautions Allen said.

"The bottom line here is that what no one realized was that dimethylmercury could actually penetrate that thin barrier of the glove. ... The fact that it came as a complete surprise to her later on indicates the level to which no one expected those gloves to do that," Allen said.

Blayney said Wetterhahn 's choice of gloves was partly based on a need for manual dexterity. Now, the college would not allow a researcher to wear thin gloves to handle dimethylmercury, he said.

No one at the college currently is using the compound, Blayney said.

Dartmouth has redoubled its efforts to make its researchers aware of the limitations of gloves, Blayney said and the college is also in the process of setting up a level of administrative oversight on the matter.

Robert Skoglund, a toxicologist with the International Poison Center in Bloomington, Minn., said Wetterhahn's death has served as "a wake-up call for a lot of people I talk with."

"There are dozens of types of gloves and each one is good for certain

chemicals and useless for others," Skoglund said.

A technical support telephone line that Skoglund uses to check the safety of various lab supplies had no information yesterday on what type of glove would be useful when handling dimethylmercury. It's an unusual enough chemical that it's not on the charts said a man who answered that telephone line.

Blayney said Dartmouth is committed to making sure other research institutions know about the dangers of dimethylmercury and the shortcomings of latex gloves

John Chavez, regional public affairs director for the U.S. Department of Labor, said the fine proposed for Dartmouth was based on formulas set out in federal laws. "OSHA makes absolutely no attempt to put a price on a person's life," he said.