To: Vaporciyan, Garo G SCC-PHENOL-PBU <Garo.Vaporciyan@shell.com>
From: Clegg, Patsy M SCC-CHSE-PC </O=SHELL/OU=MSXSCC/CN=RECIPIENTS/CN=PH197432>
Cc:
Bcc:
Received Date: 2004-12-07 11:27:00 GMT
Subject: RE: Benzene a Problem Even Below OSHA Exposure Limit Claims New Study

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Garo,

On the carbonates questions, perhaps you could send me a meeting notice when you are going to be at OSP. Sorry that I did not see this in time to respond. Been up to my eyeballs getting ready for the annual PSS management review.

Regards,
Patsy

Patsy Clegg
Product Steward
Shell Chemical LP
One Shell Plaza, 910 Louisiana, Houston, TX 77002-4916

Tel: +1 713 241 2521 **Fax:** 3325
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-----Original Message-----
From: Vaporciyan, Garo G SCC-PHENOL-PBU
Sent: Friday, December 03, 2004 9:03 AM
To: Clegg, Patsy M SCC-CHSE-PC
Subject: RE: Benzene a Problem Even Below OSHA Exposure Limit Claims New Study

Patsy,
I was wondering how they know to "blame" the benzene. After all, the workers were most probably also exposed to many other chemicals in the shoe factory. Benzene is used with other chemicals in solvent formulation, there is the residual leather tanning chemicals, the actual glue components, the vapors that come-off when they heat/cure the rubber soles, the shoe polish, etc. As you said, worthy of a toxicologist review.

Garo
P.S. I haven't forgotten your request on carbonates. I'm at OSP this Monday and wonder if you have 20min to talk about it?

-----Original Message-----
From: Clegg, Patsy M SCC-CHSE-PC
Sent: Friday, December 03, 2004 6:57 AM
To: Vaporciyan, Garo G SCC-PHENOL-PBU
Subject: RE: Benzene a Problem Even Below OSHA Exposure Limit Claims New Study

Thanks for sending this, Garo.I We became aware yesterday that the article would be published today. Shell and numerous other companies and trade associations were contacted by various media for comment. Shell chose not to comment. We will be getting a critical review of the article by our toxicologist. Reports like this is one reason Shell is

sponsoring the Shanghai Health Study.

Regards,
Patsy

Patsy Clegg
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-----Original Message-----
From: Vaporciyan, Garo G SCC-PHENOL-PBU
Sent: Thursday, December 02, 2004 11:23 PM
To: Clegg, Patsy M SCC-CHSE-PC; English, Timothy A SCC-BC-AM; Simpson, Edward J SCC-BC-AM; Young, David K SCE-CBAR; Takeno, Kaz K JAPAN-CJ-PRES
Cc: Van Wingerden, Bob B SIC-CTSOL; Hamilton, David M SCC-CTCCT/2; Stewart, Charles W SHLOIL-IPT; Fong, Howard L SCC-CTCPT/3; Newman, Richard RD SCC-CTCCT/2; Wambaugh, Jim CRII
Subject: Benzene a Problem Even Below OSHA Exposure Limit Claims New Study

fyi: Just read a very public disclosure about latest low level (below 1ppm 8hr OSHA exposure limit) benzene exposure study. Link to article is currently on yahoo home page (among other public venues).
Garo

Benzene Exposure Linked to Blood Changes

Thu Dec 2, 2:00 PM ET Health - AP
By PAUL RECER, AP Science Writer

WASHINGTON - Blood changes, including a steep decline in disease-fighting white cells, have been found in workers persistently exposed to low levels of benzene, a common industrial chemical known to pose a leukemia risk at high concentrations. Researchers reported Thursday in the journal Science that workers in a Chinese shoe factory exposed to less than one part per million of benzene experienced a significant decline of white cells and found their blood-forming cells were less vigorous than normal. U.S. occupational guidelines limit benzene exposure to one part per million, but the study found changes in the blood from lower exposure.

"We can't say that this is associated with the future risk of disease," said Dr. Nathaniel Rothman, one of two senior authors of the study. "But it does raise the question of what else is going on in the bone marrow" as a result of low-level exposure to benzene. Benzene also appears to have a toxic effect on the progenitor cells that form blood cells and that the effect of benzene can be underestimated if only mature blood cells are studied, said Rothman, a researcher at the National Cancer Institute (news - web sites), one of the National Institutes of Health (news - web sites).

Benzene is one of the most frequently used chemicals in American industry. It is used as a solvent and to make plastics, resins, adhesives and synthetic fibers. Workers in shipping, automobile repair, shoe manufacture and the refining and transportation of oil and gasoline are routinely exposed to fumes from the sweet-smelling, highly

combustible chemical. In 1987, the Occupational Safety and Health Administration (news - web sites) set the maximum allowable industrial exposure to inhaled benzene at 1 ppm in eight hours.

Rothman said it is too soon to say if that standard should be changed, but he added that the new study raises concerns about the risks of low levels of benzene and suggests that more studies are needed to ensure that American workers are protected. "Biological events are occurring (as a result of the exposure)," said Rothman. "The question is: What are the health consequences to the workers?"

In the Science study, researchers analyzed blood samples from 240 workers who were routinely exposed to benzene-laced glue in a Chinese shoe factory. They compared the results with blood drawn from 140 unexposed workers in a Chinese clothing plant. The researchers also tested the air in the factories and took urine samples to determine precisely the intensity of benzene exposure in the two workplaces. They found 109 shoe factory workers who were exposed to less than 1 ppm of benzene had an average of 15 percent to 18 percent fewer white blood cells than did workers in the other plant. Researchers also discovered that the blood progenitor cells in the shoe factory workers were less able to grow and reproduce than were such cells taken from the clothing workers.

Dr. Gilbert Omenn of the University of Michigan Medical School said in Science that the study "should cause a stir in the occupational and environmental health circles." Bill Perry, director of the Office of Chemical Hazards at the Occupational Safety and Health Administration, said the current benzene standard was developed "after more than a decade of extensive research and a comprehensive regulatory process." He said the study in Science has not yet been reviewed and "evaluation will take some time."

Officials from the Environmental Protection Agency (news - web sites) did not respond to requests for comment.

The study is a subset of a larger benzene study, now under way in China, that was prompted by concerns among scientists there that the chemical might increase leukemia among workers.

Dr. Martyn T. Smith of the University of California, Berkeley, was the second senior author. Other co-authors included those from the Chinese Center for Disease Control and Prevention (news - web sites); the University of North Carolina, Chapel Hill; the New York Blood Center, White Plains, and the Peking Union Medical College in Beijing.
