

To: 'RJBREGLIA@sunocoinc.com' <RJBREGLIA@sunocoinc.com>
From: Clegg, Patsy M SCC-CHSE-PC
</O=SHELL/OU=MSXSCC/CN=RECIPIENTS/CN=PH197432>
Cc:
Bcc:
Received Date: 2004-12-06 21:52:08 GMT
Subject: RE: Chinese worker study: Benzene article

Rudy,

We have not responded.

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
Email: patsy.clegg@shell.com
Internet: <http://www.shell.com/chemicals>

-----Original Message-----

From: Gingell, Ralph SCC-HSE
Sent: Friday, December 03, 2004 8:54 AM
To: Cagen, Stuart Z SCC-CF-SS; Clegg, Patsy M SCC-CHSE-PC
Subject: FW: Chinese worker study: Benzene article

Please respond, or ignore

-----Original Message-----

From: BREGLIA, RUDOLPH J [mailto:RJBREGLIA@sunocoinc.com]
Sent: Friday, December 03, 2004 8:42 AM
To: Gingell, Ralph SCC-HSE
Subject: Chinese worker study: Benzene article

Ralph

Has the Shanghai study group addressed this study. Appreciate your thoughts. Rudy

Hematotoxicity in Workers Exposed to Low Levels of Benzene

Qing Lan,^{1*} Luoping Zhang,^{2*} Guilan Li,³ Roel Vermeulen,¹ Rona S. Weinberg,⁴ Mustafa Dosemeci,¹ Stephen M. Rappaport,⁵ Min Shen,¹ Blanche P. Alter,¹ Yongji Wu,⁶ William Kopp,⁷ Suramya Waidyanatha,⁵ Charles Rabkin,¹ Weihong Guo,² Stephen Chanock,^{1,8} Richard B. Hayes,¹ Martha Linet,¹ Sungkyoon Kim,⁵ Songnian Yin,³ Nathaniel Rothman,¹ Martyn T. Smith²

Benzene is known to have toxic effects on the blood and bone marrow, but its impact at levels below the U.S. occupational standard of 1 part per million (ppm) remains uncertain. In a study of 250 workers exposed to benzene, white blood cell and platelet counts were significantly lower than in 140 controls, even for exposure below 1 ppm in air. Progenitor cell colony formation significantly declined with increasing benzene exposure and was more sensitive to the effects of benzene than was the number of mature blood cells. Two genetic variants in key metabolizing enzymes, myeloperoxidase and NAD(P)H:quinone oxidoreductase, influenced susceptibility to benzene hematotoxicity. Thus, hematotoxicity from exposure to benzene occurred at air levels of 1 ppm or less and may be particularly evident among genetically susceptible subpopulations.

1 Division of Cancer Epidemiology and Genetics, National Cancer Institute (NCI), National Institutes of Health (NIH), Department of Health and Human Services (DHHS), Bethesda, MD 20892, USA.

2 School of Public Health, University of California, Berkeley, CA 94720, USA.

3 Chinese Center for Disease Control and Prevention, Beijing, China.

4 New York Blood Center, Clinical Services, White Plains, NY 10605, USA.

5 School of Public Health, University of North Carolina, Chapel Hill, NC 27599, USA.

6 Peking Union Medical College, Beijing, China.

7 SAIC-Frederick, Inc., Frederick, MD 21702, USA.

8 Center for Cancer Research, NCI, NIH, DHHS, Bethesda, MD 20892, USA.

* These authors contributed equally to this work. A Little Is Still Too Much
Science 306: 1645I (This Week in Science).

TOXICOLOGY:

Factory Study Shows Low Levels of Benzene Reduce Blood Cell Counts

Erik Stockstad

A tightly controlled study, reported on page 1774 of this issue of Science, shows that workers who inhaled less than 1 part per million of benzene--an exposure considered safe under U.S. occupational guidelines--had fewer white blood cells than did unexposed workers.

Benzene poses a significant health risk through environmental exposure. Lan et al. (p. 1774; see the news story by Stokstad) undertook a cross-sectional study of factory workers in China, who were either routinely exposed to benzene, ranging to below 1 part per million (the current permitted occupational standard in the United States), or who worked in benzene-free environments. The benzene-exposed workers showed significant hematopoietic defects, most notably in progenitor cells, although mature cells of the immune system were also affected. The defects were greatest among individuals carrying alleles for a variant of the gene for myeloperoxidase, an enzyme implicated in benzene hematotoxicity. A re-examination of standard occupational levels of benzene exposure in the workplace may thus be required.

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Rudolph J. Breglia, Ph.D., DABT
Health and Safety Managing Consultant
Toxicology Services

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Cc:
Bcc:
Received Date: 2004-12-06 22:47:13 GMT
Subject: RE: Chinese worker study: Benzene article

Rudy,

Any interest from Sunoco in putting together an industry panel to work on benzene CAA residual risk? Shell is polling industry partners. Probably try to use the API BZ Task Group as an umbrella support organization.

Regards,
Patsy

Patsy Clegg
Product Steward
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-----Original Message-----

From: BREGLIA, RUDOLPH J [mailto:RJBREGLIA@sunocoinc.com]
Sent: Monday, December 06, 2004 4:21 PM
To: Clegg, Patsy M SCC-CHSE-PC
Subject: RE: Chinese worker study: Benzene article

Patsy

Thanks. Appreciate if I could get a copy when you do. Have a Happy Holiday!!! Rudy

Rudolph J. Breglia, Ph.D., DABT
Health and Safety Managing Consultant
Toxicology Services

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Sent: Monday, December 06, 2004 4:52 PM
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Regards,
Patsy

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