



Lawrence Livermore National Laboratory

January 21, 2010

Dr. Jeffrey Wong, Ph.D
Chief Scientist
Department of Toxic Substances Control
P.O. Box 806
Sacramento, CA 95812-0608

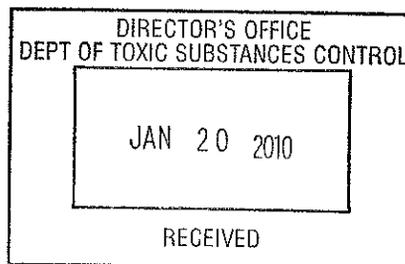
Subject: *Response to the Department of Toxic Substances Control "Chemical Information Call-In: Carbon Nanotubes," Lawrence Livermore National Laboratory*

Dear Dr. Wong:

We have evaluated the applicability of the chemical information call-in request letter (attached), and have determined that Lawrence Livermore National Laboratory (LLNL) does not "manufacture" carbon nanotubes as defined in Section 57018 (a)(4), Division 37 of the California Health and Safety Code.

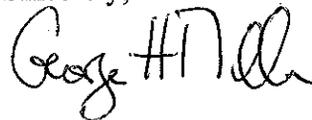
The request for information does not apply to LLNL operations; however, LLNL formally implemented a "Working Safely with Engineered Nanomaterials" program as of September 2008. This program is based on principles in Department of Energy (DOE) Policy 456.1, Secretarial Policy Statement on Nanoscale Safety, which requires that all work with nanomaterials (including carbon nanotubes) be conducted in a safe and responsible manner that protects workers, the public and the environment. In addition to the DOE Policy, standards from the following organizations were used to develop LLNL's nanomaterials management program: American Society for Testing and Materials (ASTM), International Agency for Research on Cancer (IARC), International Commission on Radiological Protection (ICRP), Nanoscale Science Research Centers (NSRC), National Institute for Occupational Safety (NIOSH) and scientific journal publications by Dr. Andrew Maynard and other experts in the field.

The transport of nanomaterials/carbon nanotubes on public roadways complies with Department of Transportation (DOT) regulation 40 CFR 171.8 for materials that meet the definition of hazardous material, and the disposal of nanomaterials/carbon nanotubes that meets the definition of hazardous waste is managed in accordance with the California Hazardous Waste Control Law (HWCL) and Resource Conservation and Recovery Act (RCRA).



If you have any questions or require additional information, please contact Bruce Schultz, Acting Department Head, Environmental Protection Department, at (925) 423-3978.

Sincerely,



George H. Miller
Director

Attachment: Department of Toxic Substances Control Letter Dated January 22, 2009

Copy w/attachment:

Kao, Wen (NNSA/LSO)	L-574
Liedle, Steve	L-001
Schultz, Bruce	L-626
Wuthrich, Steve	L-510



Department of Toxic Substances Control



Linda S. Adams
Secretary for
Environmental Protection

Maureen F. Gorsen, Director
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Arnold Schwarzenegger
Governor

January 22, 2009

Via: Certified Mail & E-Mail

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BY
DIRECTOR'S OFFICE
2009 JAN 27 P 1:49

**Re: Chemical Information Call-In
Carbon Nanotubes**

Dear Dr. Miller:

This notice serves to announce that the California Department of Toxic Substances Control (DTSC/Department) is requiring information regarding analytical test methods, fate and transport in the environment, and other relevant information from manufacturers of carbon nanotubes. The term "manufacturers" includes persons and businesses that produce carbon nanotubes in California or import carbon nanotubes into California for sale.

DTSC is exercising its authority under California Health and Safety Code, Chapter 699, sections 57018-57020. They are intended to make information on the fate and transport, detection and analysis, and other information on chemicals more available. The law places the responsibility to provide this information to the Department on those who manufacture or import the chemicals. California Health and Safety Code section 57019, subdivision (d)(2) requires that the information requested be provided to DTSC within one year of the date of this letter.

Carbon nanotubes (CNTs) are of interest to DTSC because they are in use commercially and because data on analytical methods, toxicity, physicochemical properties, and fate and transport are largely unavailable. Recent research on the potential impacts to the environment, workers and the public have highlighted issues in manufacturing and fate and transport that DTSC should consider. One study by Massachusetts Institute of Technology (MIT) detected 15 different aromatic hydrocarbons including 4 different polyaromatic hydrocarbons (PAHs) when they manufactured CNTs from a carbon vapor source using chemical vapor deposition. Another study by researchers at the Georgia Institute of Technology found that the fate of CNTs spilled into groundwater and the ability of municipal filtration systems to remove CNTs from drinking water is dependent on the characteristics of the water such as pH, natural organic content, etc. The chemical call-in program will help develop the existing body of information on carbon nanotubes needed to better protect human health and the environment.

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DTSC Chemical Call-in: Carbon Nanotubes

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If you are aware of other institutions and manufacturers who should be party to this request, we welcome your insights. If you feel your institution or organization should not be a party to this request, you should notify the Department in writing and state your reasons for not being included.

The Department wants to meet jointly with all manufacturers quarterly to aid collaboration and focus research efforts as necessary. It is the Department's intent to apply for National Nanotechnology Initiative (NNI) grant funds, or other financial support that may be available, to supplement the efforts of the manufacturers and the academic researchers. There is no guarantee of grant funds. In any event, each company and institution is required to provide the requested information independently or via some formal collaborative organization within that time frame.

You are required to provide any or all information, with supporting references, prior to the deadline so DTSC can evaluate the information, build a public record of compliance for each submitting organization, and better craft our grant proposal. At your request, DTSC can exercise the "Trade Secret" provisions of H&S Code Sec. 57020. DTSC has posted our research bibliography on our web site which will be updated as new information is compiled, and as information is received from manufacturers. Our intent is that the information will be utilized to support sound science and safety in chemical practices by regulatory agencies, manufacturers, researchers, product developers, and consumers. Information on this chemical call-in can be found at:

<http://www.dtsc.ca.gov/TechnologyDevelopment/Nanotechnology/index.cfm>

This announcement is the formal information request, and manufacturers subject to the statute are required to provide the information to DTSC within 365 days. We look forward to working with this important and emerging industry. Should you have questions or comments, please feel free to contact our team:

William P. Ryan, P.E. at bryan@dtsc.ca.gov or 916/322-5919

Stan Phillippe, P.E. at sphillip@dtsc.ca.gov or 916/322-5347

Sincerely,



Jeffrey Wong, Ph.D.
Chief Scientist, DTSC